

SOUTH CAROLINA CDBG-MIT ACTION PLAN

Further Additional Supplemental Appropriations
for Disaster Relief Act of 2018
Public Law 115-123



South Carolina Disaster Recovery Office, a division of the
South Carolina Department of Administration

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STATE OF SOUTH CAROLINA: CDBG-MIT ACTION PLAN

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Introduction

Within 4 years, 3 major storms have impacted the State of South Carolina, causing immense damage and several casualties. In October 2015, the state was devastated by over 20 inches of rainfall from an extratropical storm worsened by nearby Hurricane Joaquin, which caused significant flooding and storm damage throughout the state. A year later, Hurricane Matthew entered the state near McClellanville, South Carolina as a Category 1 Hurricane, unleashing strong winds and torrential rainfall throughout the eastern part of the state. Most recently, in September 2018, Hurricane Florence made landfall just north of South Carolina in Wrightsville Beach, North Carolina. While North Carolina experienced the worst of the storm, South Carolina suffered from heavy rainfall and flooding from the downriver watersheds shared with North Carolina. The effects of these storms will be felt for decades.

In addition to the three major storms, South Carolina has experienced several close calls over the past years: Hurricane Irma in 2017, Hurricane Michael in 2018, and, most recently, Hurricane Dorian in 2019. These storms resulted in major damages to neighboring states, as well as significant expense to South Carolina for evacuation efforts and debris removal operations.

The greatest impact of these declared storms, in many ways, were their destabilizing effects and unpredictability. Despite advances in meteorology, it's impossible to know where a storm and its accompanying damage will exactly hit until it's often too late. Some counties of South Carolina received mild rain, while others were severely impacted multiple times. Even after the storm, several communities faced uncertainty of whether they would experience severe flooding as the deluge of water made its way to the Atlantic Ocean.

The storms caused debilitating damage throughout South Carolina. Water and wind-damaged homes became unlivable. Those without the means to repair their homes were either forced to live in unsafe structures, relocate with relatives, or flee the disaster area. This strained the fabric of impacted communities – some of which had experienced damage from all 3 storms. The damage continued to be felt by the local economy as businesses lost customers and local government tax revenues diminished. One storm can cause all this destabilizing damage, three storms in four years have left many communities on the brink of collapse. Actions to mitigate future damages need to be made now, before the next storm strikes.



October 6, 2015: Continuing effects of flooding caused by Hurricane Joaquin in the area of the Black River in Sumter County

Stability can be given to these people through mitigating future storm damage. While the State might not know where a storm will hit, it does know which areas are likely to experience the most damage. With the appropriate funds, the State can target these areas for mitigation projects that will improve resiliency for individual households, neighborhoods, and communities.

Congress, through Public Law 115-123, seeks to address resiliency by enabling the Department of Housing and Urban Development (HUD) to administer and award \$12 billion in mitigation grants to previous CDBG-DR grant recipients impacted by disasters from 2015 to 2017. South Carolina is designated to receive \$157,590,000 in mitigation funds for the Most Impacted and Distressed counties from the 2015 Severe Storm disaster (Public Law 114-113) and the Most Impacted and Distressed counties from the 2016 Hurricane Matthew disaster (Public Law 114-254). Additionally, Richland County will receive \$21,864,000, Lexington County will receive \$15,185,000, and the City of Columbia will receive \$18,585,000 in mitigation funds as a result of the 2015 Severe Storm (Public Law 114-113). In total, the people of South Carolina will be awarded \$213,224,000, with the State being responsible for \$157,590,000 of the awarded grants.



NASA imagery captures Hurricane Matthew as it passes over SC

The South Carolina Department of Administration and its South Carolina Disaster Recovery Office (SCDRO) was designated by Governor McMaster in Executive Order 2018-59 as the responsible entity for administering the CDBG-MIT funds allocated to the State. Using the planning guidance and direction provided by the governor-appointed CDBG-DR Steering Committee, the SCDRO will faithfully execute the CDBG-MIT program in South Carolina.

As required by HUD, South Carolina submits this Action Plan to establish how the State will allocate its funds through its mitigation programs. This includes the proposed use of funds, criteria for eligibility, and

how funds will address long-term mitigation throughout the state. The Mitigation Needs Assessment, which evaluates the risk profiles of the South Carolina and HUD-defined Most Impacted and Distressed areas, the critical lifelines potentially at risk in those areas, and the social vulnerability of the target area, forms the basis for the decisions outlined in the Method of Distribution. This Action Plan was developed with the help of many state and local stakeholders as well as the public to target the greatest mitigation needs that can be addressed by these limited federal funds.



October 18, 2016: Flood waters continued to impact homes in Marion County 10 days after Hurricane Matthew made landfall

MITIGATION NEEDS ASSESSMENT

Mitigation Needs Background

Community Profile: Summary of Impact Areas

Since 2015, South Carolina has been impacted by three presidentially-declared disasters: Hurricane Joaquin in 2015, Hurricane Matthew in 2016, and Hurricane Florence in 2018. These three storms led to the availability of FEMA individual assistance for impacted citizens, FEMA public assistance for local communities, and, eventually, Community Development Block Grant – Disaster Recovery funding to recover from the storms. The bulk of the damage from all three of these storms was not the wind and storm surge, but the eventual flooding from the rain falling over the state for an extended period.

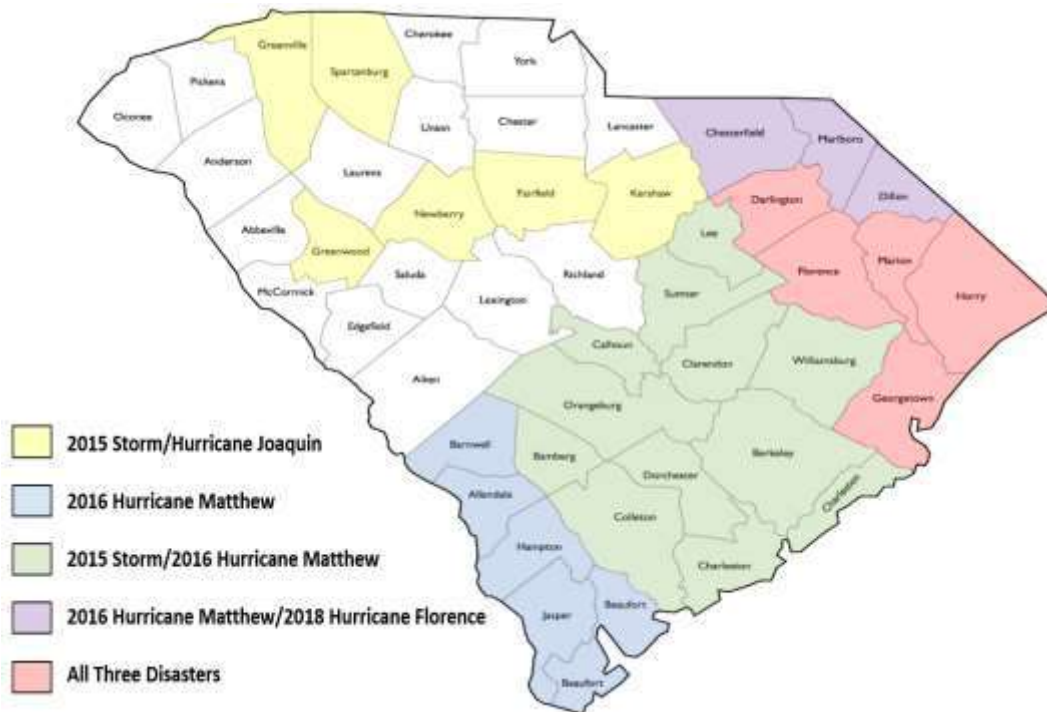


Figure 1: Individual Assistance Declared Counties by Disaster

While thirty of the state's forty-six counties have been impacted by at least one of the three major disasters in recent history, the damage distribution has not been equal across the impacted areas. Given the limited funding available for mitigation, the South Carolina CDBG-DR Steering Committee has directed the SCDRO to focus mitigation efforts on two major areas which have been impacted the most: The Pee Dee and Santee watersheds.



Figure 2: South Carolina Watersheds

Most Impacted and Distressed Counties

As specified by the *Federal Register Notice* published on August 30, 2019 which outlines the requirements for accessing the mitigation funds, South Carolina hereby defines the area in which the SCDRO will conduct mitigation activities. These areas are the HUD-identified most impacted and distressed (MID) counties of Charleston, Clarendon, Dorchester, Florence, Georgetown, Horry, Marion, Sumter, and Williamsburg. Additionally, the state has identified additional MID counties of Chesterfield, Marlboro, Dillon, Darlington and Lee in the Pee Dee watershed, and Calhoun, Orangeburg, and Berkeley in the Santee watershed. These counties together comprise the Santee and Pee Dee watersheds.

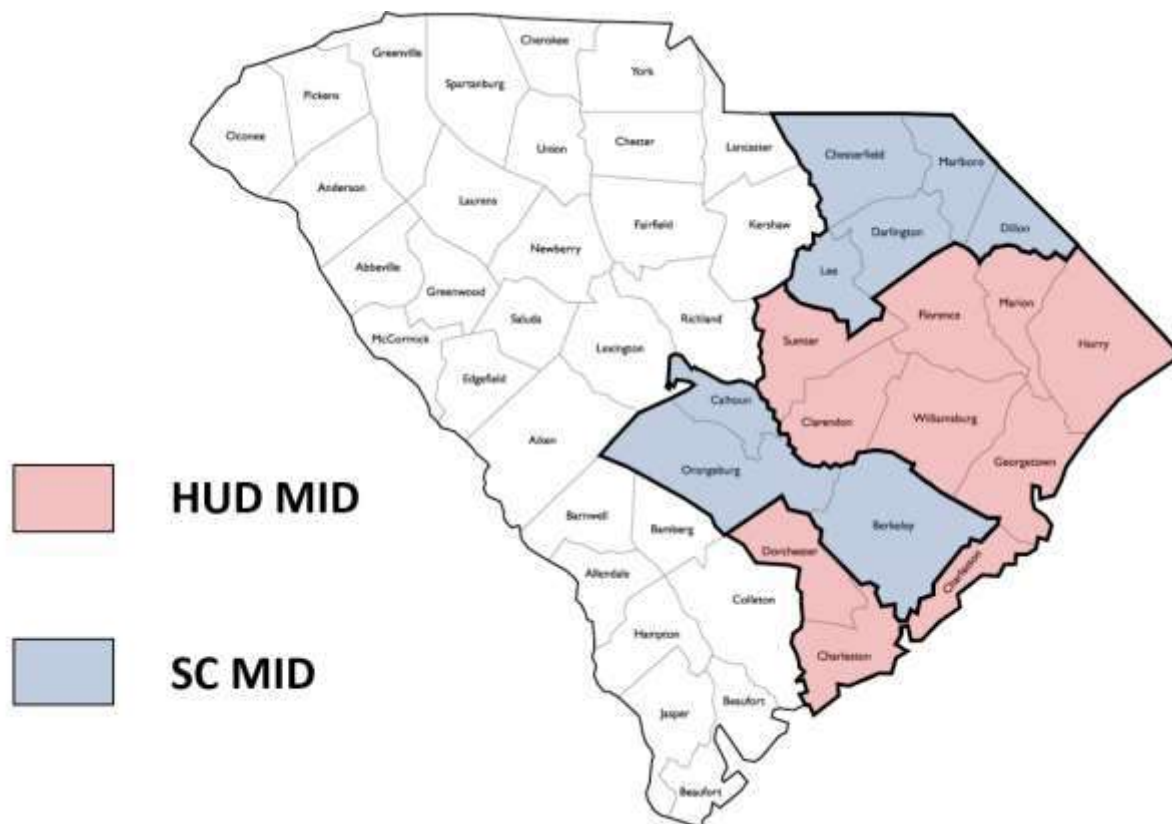


Figure 3: Most Impacted and Distressed Counties (MID) in South Carolina

The State partnered with the University of South Carolina Hazards & Vulnerability Research Institute (HVRI) to assess the risks in the MID, potential lifeline impacts, social vulnerability, and the mitigation needs. HVRI worked with the South Carolina Emergency Management Division to develop the state's FEMA-approved Hazard Mitigation Plan (HMP). The state HMP can be found at:

<https://www.scmd.org/em-professionals/plans/hazard-mitigation-plan/>

HVRI's analysis will focus solely on the HUD and SC-identified MID counties.

Hazard Profile Updates

South Carolina is vulnerable to a wide-range of both natural and non-natural hazards of varying likelihoods and consequences. Among the hazards that affect South Carolina, wildfire is the most frequently experienced natural hazard in the state and landslides the least.¹ The regional and county variability in social, economic, and infrastructural conditions means that given the same event magnitude, some areas may experience greater risks and vulnerability than others. Historically, Charleston, Horry, and Georgetown counties incurred the greatest losses due to Hurricanes Hugo (1989), Fran (1996), and Floyd (1999).² From 2000-2017 South Carolina accumulated more than \$1.7 billion in hazard event losses primarily from hurricanes and flooding, followed by tornadoes and wildfires.³ During this same period, hazard event losses in Horry, Georgetown, and Florence accounted for 23% of the state's overall losses, and these are directly attributable to the 2015 flooding, Hurricane Matthew in 2016, and Hurricane Irma in 2017. On a per capita basis, property losses since 2000 are highest in Georgetown (\$1,716), Dillon (\$803), and Horry (\$769) Counties.⁴

County Hazard Risk Scores

The county hazard risk scores are from the annual probabilities for each hazard for each county as identified in the South Carolina Hazard Mitigation Plan 2018⁵. For each hazard, the county with the highest annual likelihood for that hazard received a score of 1.00 and the county with the lowest received a score of 0.00. The remaining counties scaled accordingly depending on where their values were relative to the highest and lowest counties.

Based on the SCEMD's risk assessment the five most hazardous counties are Berkeley, Orangeburg, Aiken, Lexington, and Greenville. However, when enhancing the scoring to include flooding, flash flooding, and liquefaction potential and reducing the impact of hazardous materials spills, a differing order is produced with Charleston, Dorchester, Berkeley, Orangeburg, and Aiken making up the top five (Table 1). The shift is reflective of the comparative importance of the flood hazard in Charleston, Berkeley, Georgetown, and Marion, and the severe weather risk in Aiken and Orangeburg.

Identified Hazards in County Mitigation Plans

All the counties in the assessment region identified six significant hazards in their hazard mitigation plans (Table 2). The most common include floods, hurricanes and coastal storms, severe storms including tornadoes and lightning, drought/extreme heat, winter storms and freezes, and earthquakes. With the exception of Horry County, all counties identified hail as a hazard in their plans while Charleston County was the only one to identify erosion as a hazard for their area.

¹ State of South Carolina, 2018. *South Carolina Hazard Mitigation Plan, October 2018 Update*. Accessed on November 1, 2019. <https://www.scmd.org/media/1391/sc-hazard-mitigation-plan-2018-update.pdf>

² Ibid.

³ Hazards & Vulnerability Research Institute, 2019. Computed property and crop losses from 2000-2017 from Spatial Hazard Events and Loss Database (SHELDUS) v. 17. Accessed on November 1, 2019, <https://sheldus.org>

⁴ Ibid.

⁵ Op. cit. Note 1, Table 4.T.4 on page 201.

Table 1 Hazard Risk Scores from South Carolina Hazard Mitigation Plan, 2018*

| HAZARD SCORE BASED ON FUTURE ANNUAL PROBABILITY OF HAZARD BY COUNTY (Values Min-Max Normalized) | | | | | | | | | | | | | | | | | |
|--|-------------------|---------|------------|--------------|--------------|-------------|-------|------|------|-----------|--------------|--------------|---------|-------------------|----------|------|----------------|
| County | Hazard Risk Score | Drought | Earthquake | Extreme Cold | Extreme Heat | Flash Flood | Flood | Fog | Hail | Lightning | Liquefaction | Severe Storm | Tornado | Tropical Cyclones | Wildfire | Wind | Winter Weather |
| BERKELEY | 9.61 | 0.26 | 0.20 | 0.14 | 0.48 | 0.70 | 0.29 | 1.00 | 0.85 | 1.00 | 0.50 | 0.90 | 0.87 | 0.70 | 0.89 | 0.50 | 0.43 |
| CALHOUN | 5.05 | 0.65 | 0.00 | 0.22 | 0.86 | 0.24 | 0.10 | 0.82 | 0.11 | 0.13 | 0.16 | 0.57 | 0.22 | 0.30 | 0.09 | 0.50 | 0.09 |
| CHARLESTON | 8.86 | 0.19 | 0.07 | 0.00 | 0.13 | 0.99 | 0.93 | 1.00 | 0.64 | 0.62 | 0.98 | 0.77 | 0.70 | 0.80 | 0.23 | 0.46 | 0.35 |
| CHESTERFIELD | 6.17 | 0.50 | 0.00 | 0.51 | 0.68 | 0.35 | 0.10 | 0.81 | 0.18 | 0.41 | 0.12 | 0.63 | 0.26 | 0.25 | 0.38 | 0.78 | 0.21 |
| CLARENDON | 6.83 | 0.32 | 0.00 | 0.30 | 0.72 | 0.21 | 0.26 | 0.91 | 0.23 | 0.44 | 0.15 | 0.70 | 0.61 | 0.35 | 0.54 | 0.67 | 0.43 |
| DARLINGTON | 6.29 | 0.38 | 0.02 | 0.43 | 0.65 | 0.58 | 0.10 | 0.81 | 0.20 | 0.28 | 0.27 | 0.43 | 0.48 | 0.35 | 0.35 | 0.89 | 0.06 |
| DILLON | 4.92 | 0.20 | 0.02 | 0.36 | 0.31 | 0.54 | 0.25 | 0.72 | 0.10 | 0.10 | 0.26 | 0.00 | 0.22 | 0.50 | 0.15 | 1.00 | 0.18 |
| DORCHESTER | 7.85 | 0.45 | 1.00 | 0.05 | 0.47 | 0.62 | 0.26 | 0.91 | 0.37 | 0.36 | 0.55 | 1.00 | 0.30 | 0.45 | 0.31 | 0.43 | 0.32 |
| FLORENCE | 7.18 | 0.26 | 0.00 | 0.27 | 0.51 | 0.66 | 0.16 | 0.78 | 0.32 | 0.47 | 0.21 | 0.47 | 0.52 | 0.60 | 0.64 | 0.89 | 0.41 |
| GEORGETOWN | 7.13 | 0.00 | 0.00 | 0.15 | 0.23 | 0.00 | 0.61 | 0.98 | 0.16 | 0.62 | 1.00 | 0.65 | 0.43 | 0.95 | 0.33 | 0.72 | 0.29 |
| HORRY | 7.77 | 0.08 | 0.00 | 0.17 | 0.03 | 0.56 | 0.29 | 0.92 | 0.86 | 0.84 | 0.96 | 0.04 | 0.39 | 1.00 | 0.48 | 0.96 | 0.21 |
| LEE | 4.70 | 0.38 | 0.00 | 0.28 | 0.66 | 0.26 | 0.13 | 0.86 | 0.07 | 0.13 | 0.17 | 0.43 | 0.09 | 0.25 | 0.20 | 0.76 | 0.05 |
| MARION | 5.15 | 0.16 | 0.00 | 0.19 | 0.21 | 0.39 | 0.47 | 0.92 | 0.10 | 0.20 | 0.52 | 0.10 | 0.00 | 0.70 | 0.06 | 0.93 | 0.20 |
| MARLBORO | 5.84 | 0.34 | 0.05 | 0.52 | 0.65 | 0.51 | 0.22 | 0.77 | 0.08 | 0.19 | 0.26 | 0.45 | 0.13 | 0.45 | 0.19 | 0.98 | 0.10 |
| ORANGEBURG | 8.81 | 0.69 | 0.02 | 0.25 | 0.79 | 0.51 | 0.16 | 0.92 | 0.42 | 0.82 | 0.20 | 1.00 | 1.00 | 0.35 | 0.74 | 0.50 | 0.43 |
| SUMTER | 6.55 | 0.46 | 0.00 | 0.30 | 0.84 | 0.63 | 0.21 | 0.87 | 0.24 | 0.37 | 0.19 | 0.56 | 0.43 | 0.30 | 0.39 | 0.70 | 0.05 |
| WILLIAMSBURG | 6.90 | 0.11 | 0.00 | 0.31 | 0.53 | 0.20 | 0.21 | 0.96 | 0.15 | 0.63 | 0.23 | 0.69 | 0.17 | 0.55 | 1.00 | 0.72 | 0.44 |

*The scores were adjusted from the State Hazard Mitigation Plan 2018 by excluding hazmat scores from the calculation and including the likelihood of flooding, flash flooding, and liquefaction potential.

Table 2 Hazards Identified by South Carolina Counties in their County Hazard Mitigation Plans

| County | Flood | Hurricanes and Coastal Storms | Severe Storms, Tornadoes and Lightning | Wildfire | Drought/Extreme Heat | Winter Storms and Freezes | Hail | Erosion | Dam/Levee Failure | Earthquakes, Sinkholes, Landslides | Tsunami | Other Hazards |
|--------------|-------|-------------------------------|--|----------|----------------------|---------------------------|------|---------|-------------------|------------------------------------|---------|---------------|
| BERKELEY | X | X | X | X | X | X | X | | X | X | | |
| CALHOUN | X | X | X | X | X | X | X | | | X | | |
| CHARLESTON | X | X | X | X | X | X | X | X | X | X | X | X |
| CHESTERFIELD | X | X | X | X | X | X | X | | | X | | X |
| CLARENDON | X | X | X | X | X | X | X | | X | X | | |
| DARLINGTON | X | X | X | X | X | X | X | | X | X | | X |
| DILLON | X | X | X | X | X | X | X | | | X | | X |
| DORCHESTER | X | X | X | X | X | X | X | | X | X | | X |
| FLORENCE | X | X | X | X | X | X | X | | X | X | | X |
| GEORGETOWN | X | X | X | X | X | X | X | | X | X | | |
| HORRY | X | X | X | X | X | X | | | | X | X | X |
| LEE | X | X | X | X | X | X | X | | X | X | | |
| MARION | X | X | X | X | X | X | X | | | X | | X |
| MARLBORO | X | X | X | X | X | X | X | | | X | | X |
| ORANGEBURG | X | X | X | X | X | X | X | | | X | | |
| SUMTER | X | X | X | X | X | X | X | | X | X | | |
| WILLIAMSBURG | X | X | X | X | X | X | X | | X | X | | |

Source: South Carolina Hazards Mitigation Plan, October 2018 Update.

Social Vulnerability

Following the South Carolina's Hazard Mitigation Plan as well as South Carolina's Recovery Action Plan, we used the Social Vulnerability Index (or SoVI) to define the most vulnerable populations within the two watersheds. SoVI is a well-established and oft-cited metric used to highlight the geographic differences in relative vulnerability to environmental hazards at census tract to county scales.⁶ SoVI synthesizes 29 socioeconomic variables that decades of research suggest contribute to a community's ability (or uneven capacity) to prepare for, respond to, and recover from hazards. When examined in conjunction with specific hazards, it helps to identify those areas with the greatest physical impact from the hazard that contain the most vulnerable populations.

The SoVI was updated from the 2010-14 version used in the State Mitigation Plan. The SoVI 2017 produced for the HUD CDBG-MIT plan includes the most recent five-year data from the U.S. Census American Community Survey customized for comparisons within the two assessment watersheds, not the entire state of South Carolina as shown in Figure 4 (left). The panel on the right shows the changes in social

⁶ See <http://sovi.org> for information about the construction of SoVI and its use in practice and in research.

vulnerability from 2010-14 to 2017 highlighting areas along the coast (especially in Horry, Georgetown, and Charleston Counties) that have become more vulnerable.

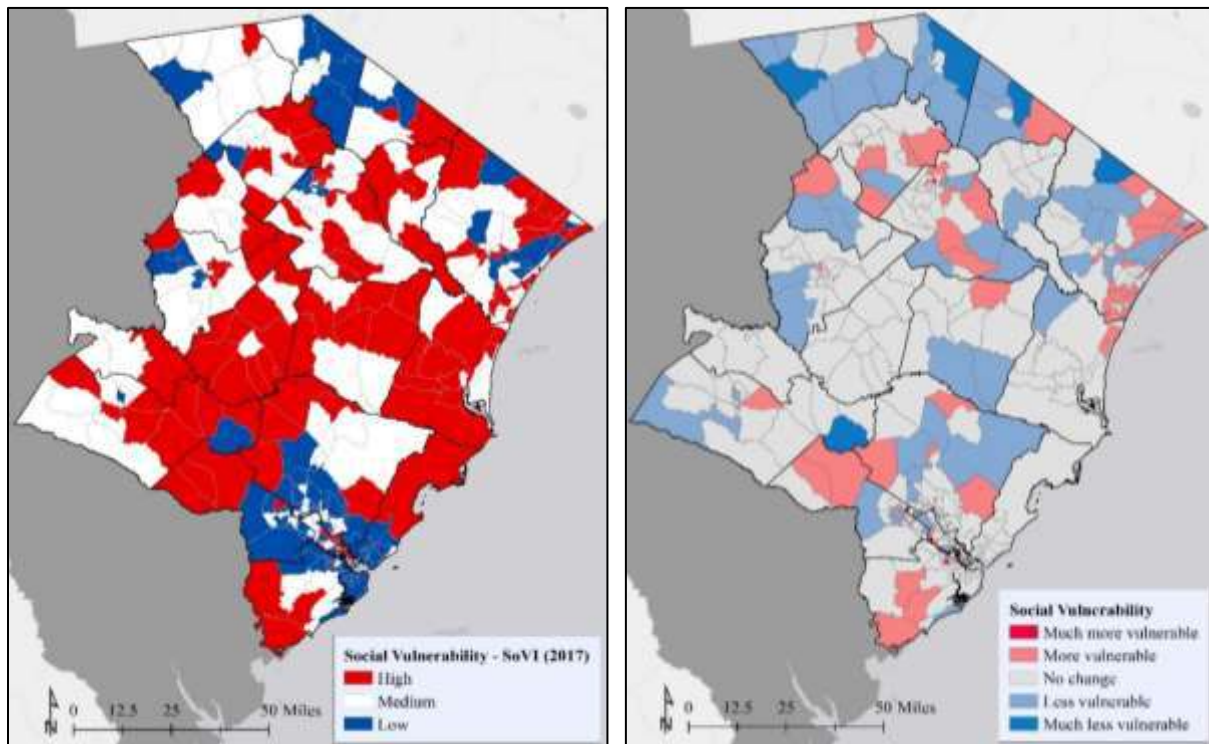


Figure 4 Social Vulnerability for the seventeen South Carolina counties (by Census Tracts) (left) and changes in vulnerability from the 2010-14 to the 2017 SoVI (right)

Another indicator of vulnerable populations in these two watersheds beyond their social vulnerability is the at-risk electricity-dependent population among Medicare beneficiaries who require life-dependent medical and durable medical equipment such as ventilators and oxygen concentrators. Such populations are severely at risk during prolonged power outages caused by severe weather, flooding, and tropical storms and hurricanes as recent studies and disasters have shown.⁷ The emPower Program of the Assistant Secretary for Preparedness and Response (ASPR) at Health and Human Services (HHS) provides geospatial data on such beneficiaries to assist in preparedness, response, and recovery in emergencies at the local level.⁸ More than one-third of South Carolina's Medicare beneficiaries live in MID counties, and a third of these are electricity dependent. The largest percentage are in Dillon County (7.3%), followed by

⁷ C. Dominianni et al., 2018. Power outage preparedness and concern among vulnerable New York City residents, *J. Urban Health* 95(5): 716-726; A. Issa, 2018. Deaths related to Hurricane Irma-Florida, Georgia, and North Carolina, September 4-October 10, 2017, *Morbidity and Mortality Weekly Report (MMWR)* 67(30): 829-832 (<https://www.cdc.gov/mmwr/volumes/67/wr/mm6730a5.htm>)

⁸ See <https://empowermap.hhs.gov/>

Marion (6.6%), and Chesterfield (6.5%).⁹ Within the counties, many of these populations overlap with the most socially vulnerable census tracts especially in Dillon and Marlboro counties (Figure 5) providing an additional justification for mitigation needs.

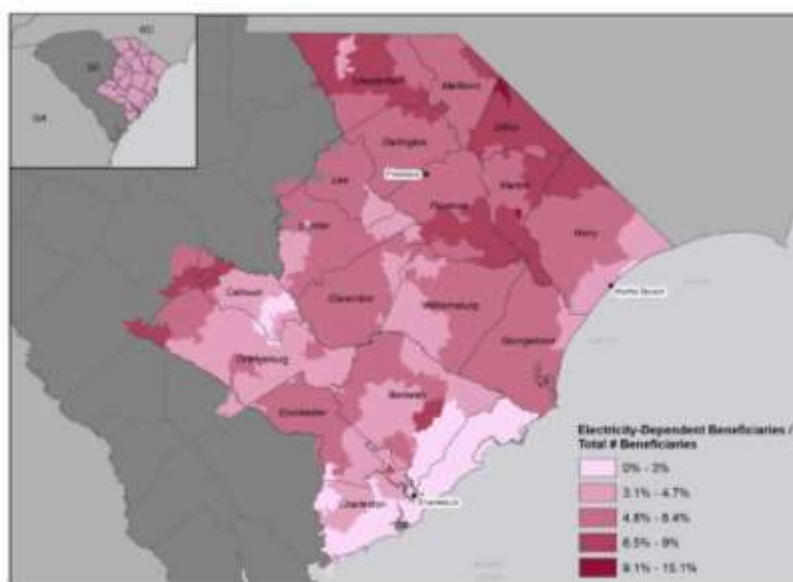


Figure 5 At risk Medicare beneficiaries based on electricity-dependent medical equipment need

Mapping Hazard Zones and Vulnerability

The hazard zones for the South Carolina MID areas depicted in the map series below, also includes a short summary for each. The hazards data are from the South Carolina's Hazard Mitigation Plan 2018. Where appropriate, and depending on the hazard type, the geographic variability in the hazard exposure is shown by hexagon grids of equal size to reduce the visual impact of the different sized census block groups and tracts as shown in the State's Hazard Mitigation Plan. However, in order to merge the vulnerability data and calculate risk scores for each census tract (the unit of analysis for CDBG-MIT), hazards were summarized taking the average of hexagon grid values that fall within each census tract. In order to compare across diverse hazards using the same data classification values, we defined our mapping categories using standard deviations from the mean so that we could preserve the underlying distribution of the data.¹⁰ The color shading from light to darker hues represents low, medium, and high risk for each of the hazards.

⁹ Ibid. Computed for the MID counties from the emPower data. Accessed on November 11, 2019.

¹⁰ The hazard risk was classified using 0.5 standard deviations from the mean (the mid-point in the distribution). The lighter shading represents cases that are less than the average (<-0.5 std. dev or 33% of the cases), while the darker shading on the map represents cases greater than the average (>0.5 std. dev or 33% of the cases). Approximately 34% of the cases are between the mean and 0.5 std. dev on either side of it (-0.5 to +0.5 std. dev).

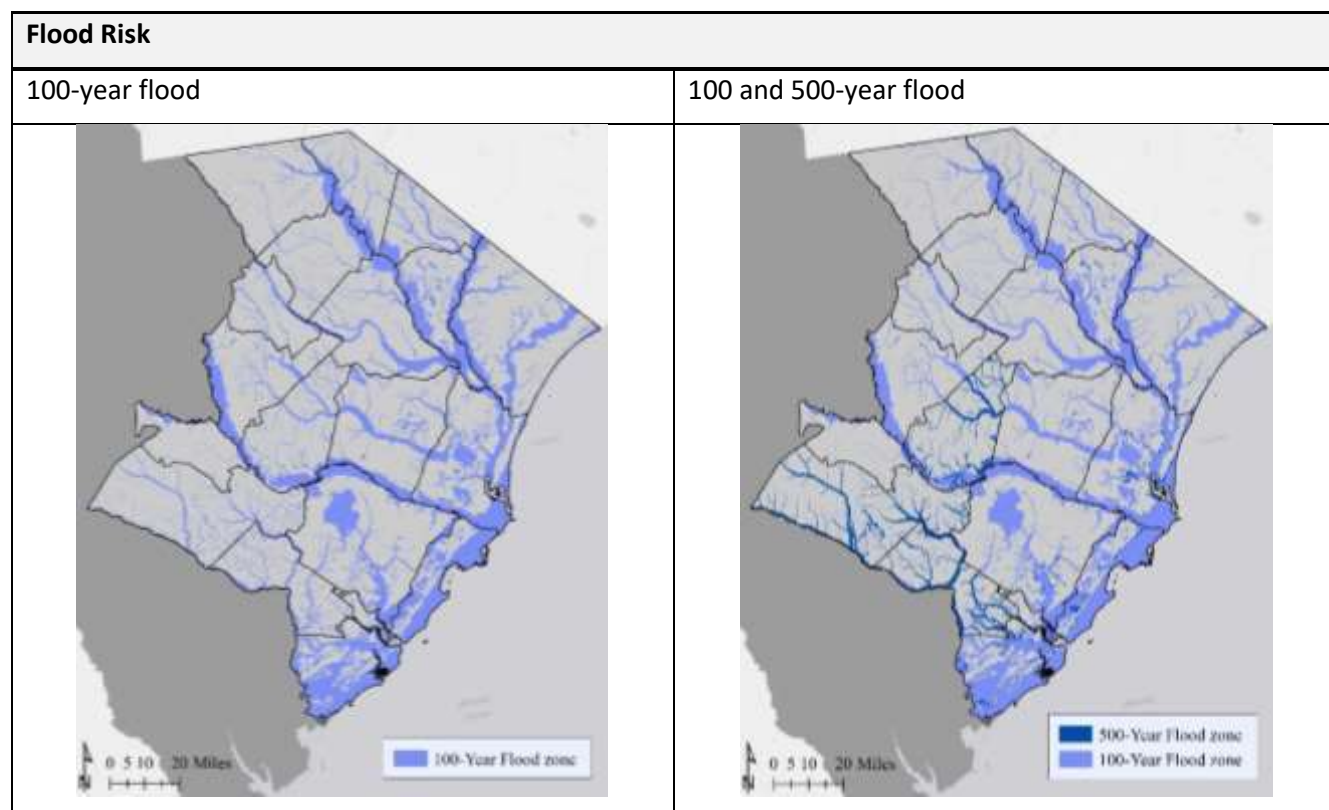
The bi-variate maps illustrate where the hazard risk scores intersect with the social vulnerability. Those areas with high social vulnerability and high-risk scores are shaded red. Areas with low risk scores and low social vulnerability are shaded in light blue.

Major Hazards of Concern

Given the recent disaster experience within South Carolina and in the MID defined areas, we highlight the climate-sensitive hazards related to flooding, severe storms, and hurricane/tropical storms systems, beginning with flood risk.

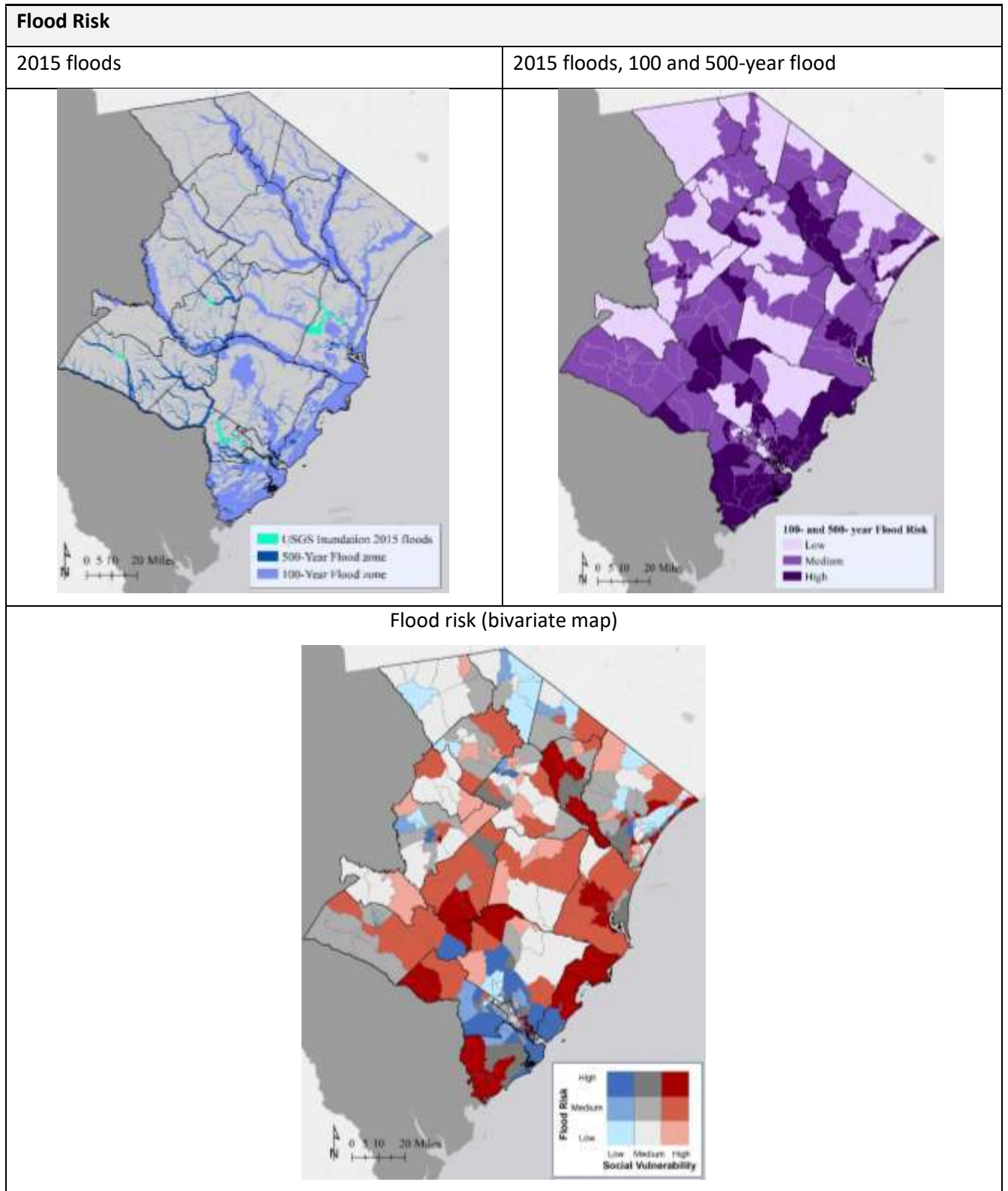
Flood Risk

According to the South Carolina State Hazard Mitigation Plan 2018¹¹, about 75% of presidential disaster declarations relate to flooding. Riverine or coastal flooding is described in this section. Flash floods and storm surge are discussed separately in the following sections (due to the difference in the nature of the flooding hazard itself). The flooding events typically occur in floodplains, which are delineated by the frequency of the flood that would cover the area. The delineations for the 100-year and 500-year flood define the exposure to the flooding risk. The inundation from the 2015 floods was added to the as a layer as it exceeded the 500-year flood delineation in many areas.¹²



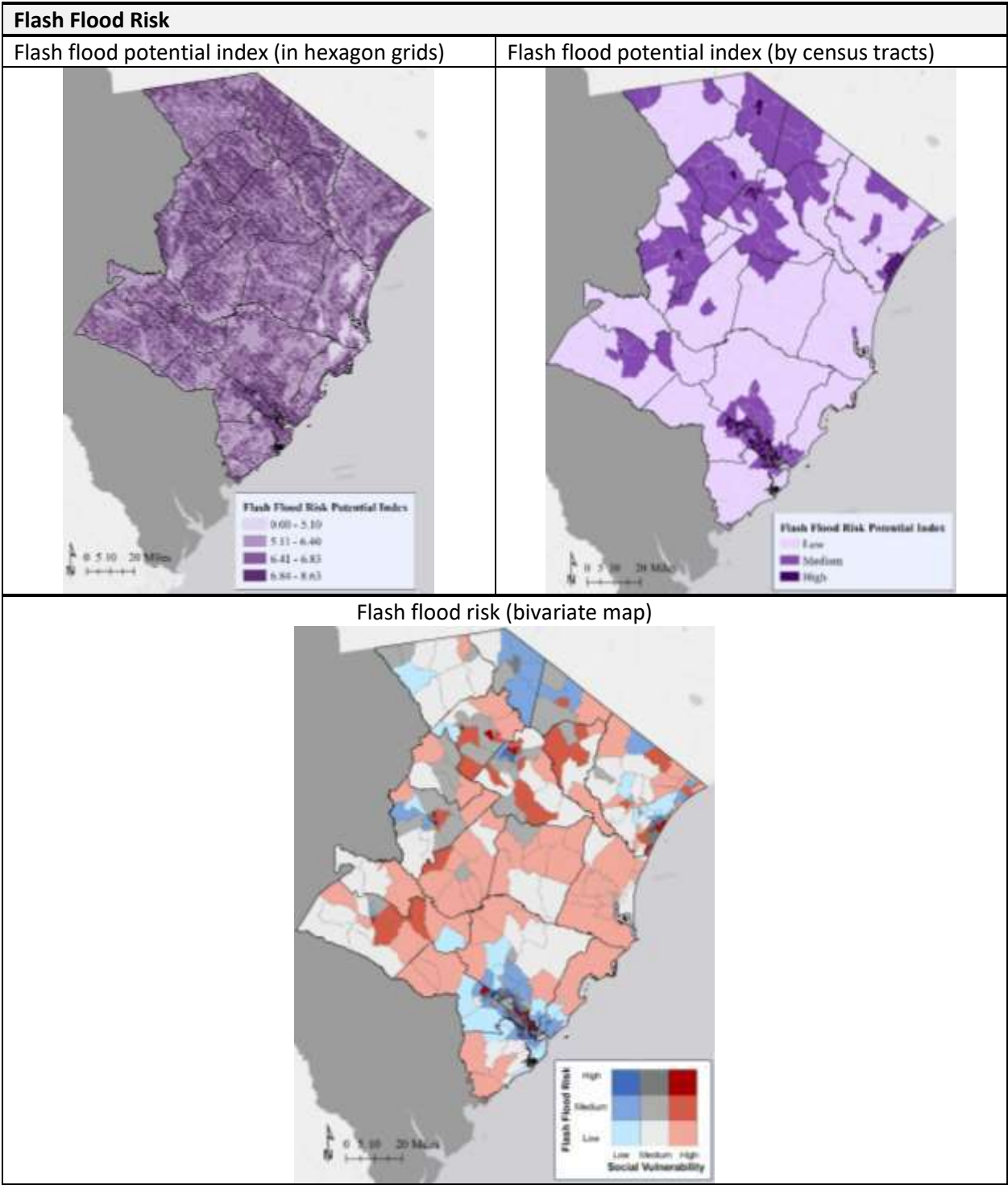
¹¹ State of South Carolina, 2018. *South Carolina Hazard Mitigation Plan, October 2018 Update*. Accessed on November 1, 2019. <https://www.scecmd.org/media/1391/sc-hazard-mitigation-plan-2018-update.pdf>

¹² Musser, J.W., Watson, K.M., Painter, J.A., and Gotvald, A.J., 2016, Flood-inundation maps of selected areas affected by the flood of October 2015 in central and coastal South Carolina: U.S. Geological Survey Open-File Report 2016–1019, 81 p., <http://dx.doi.org/10.3133/ofr20161019>.



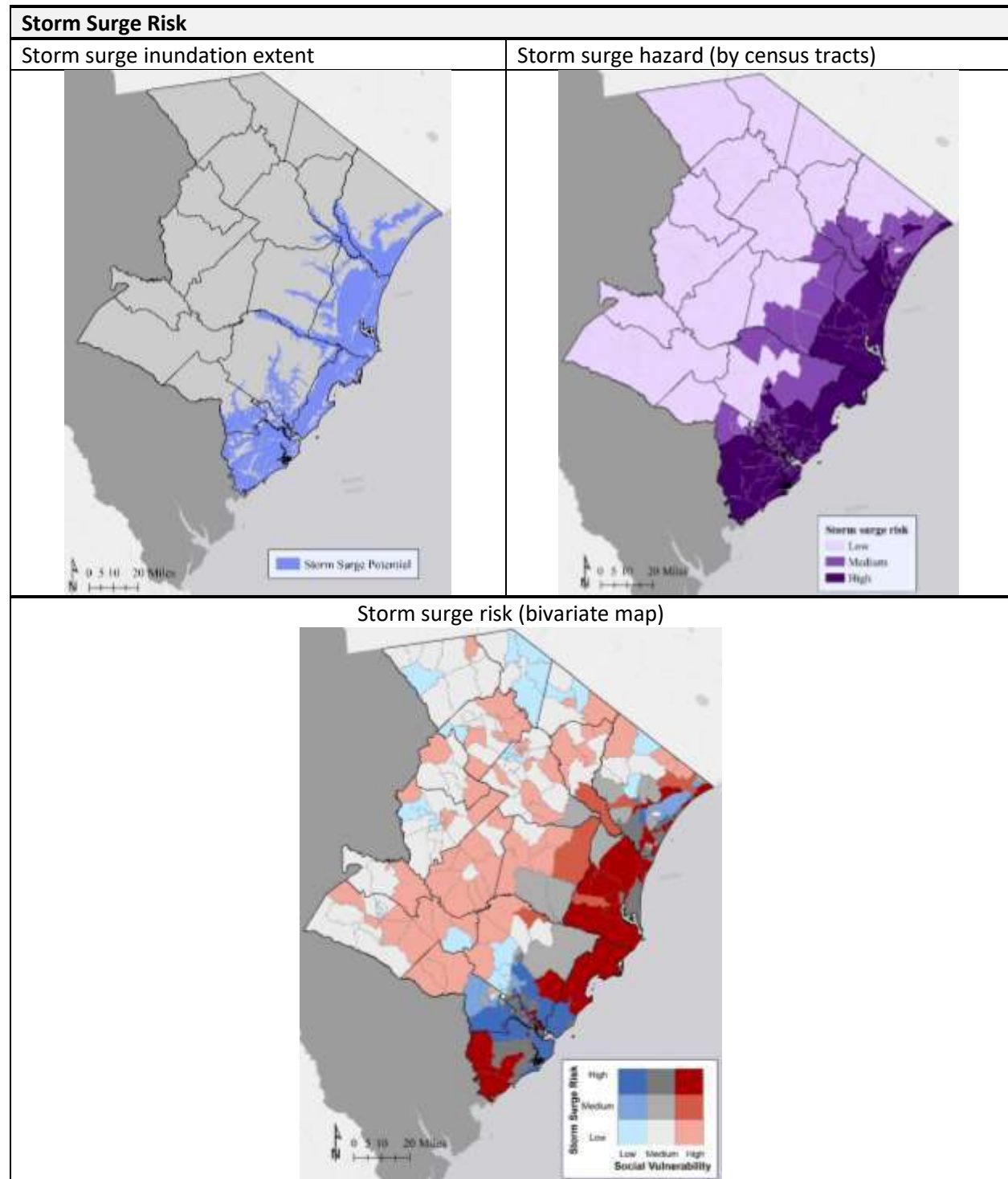
Flash Flood Risk

Flash floods that are caused by locally heavy rains in areas with quick water run-off are described here by using the flash flood potential index. As expected, the flash flooding hazard is higher in urban areas because of impervious surfaces that causes rapid run-off.



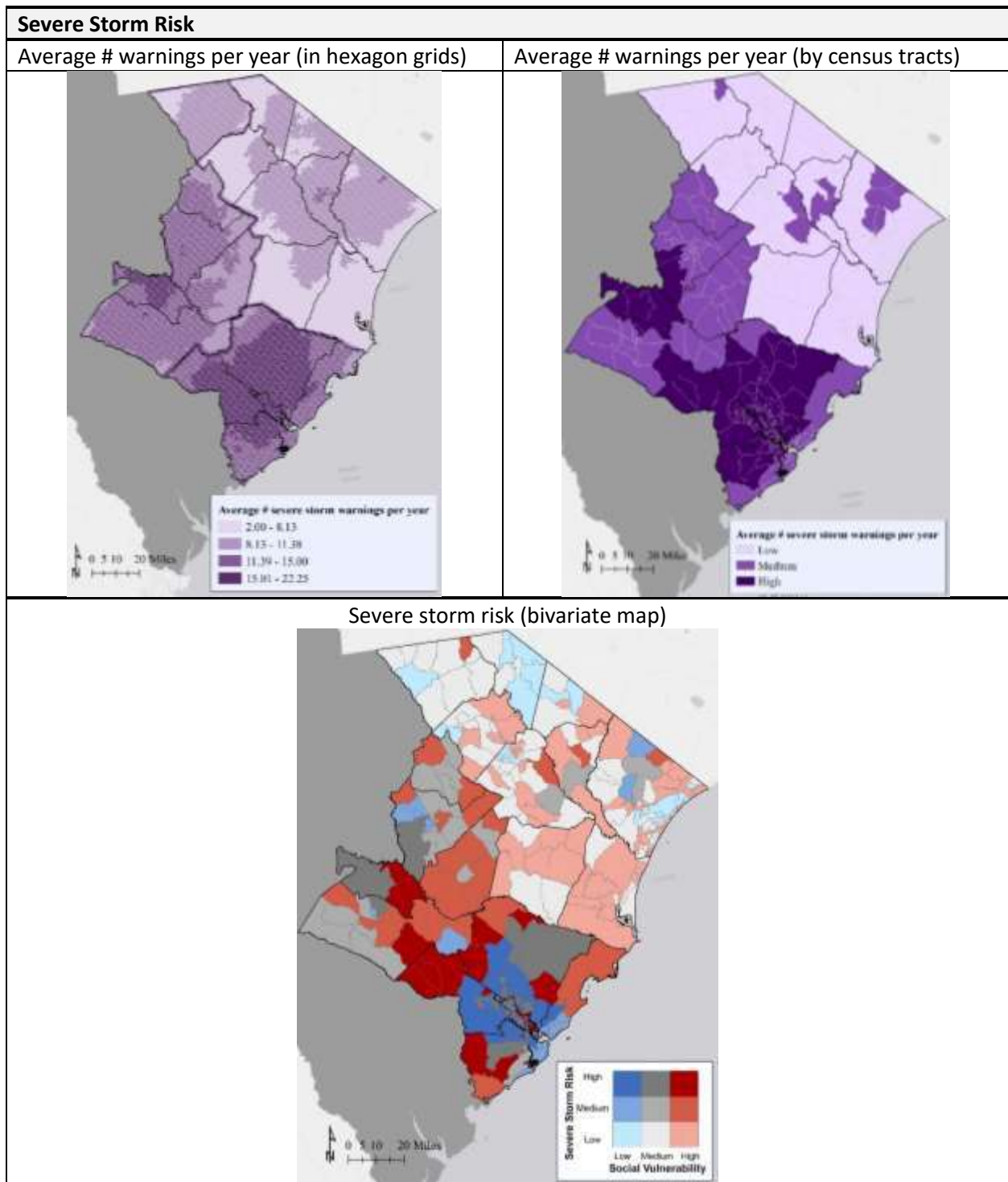
Storm Surge Risk

Storm surge is one of the hazards associated with tropical storms and hurricanes. The storm surge hazard is defined as the elevated water level that is pushed towards the shore by the force of strong wind. The Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model is used to estimate storm surge heights and delineate the potential exposure to storm surge.



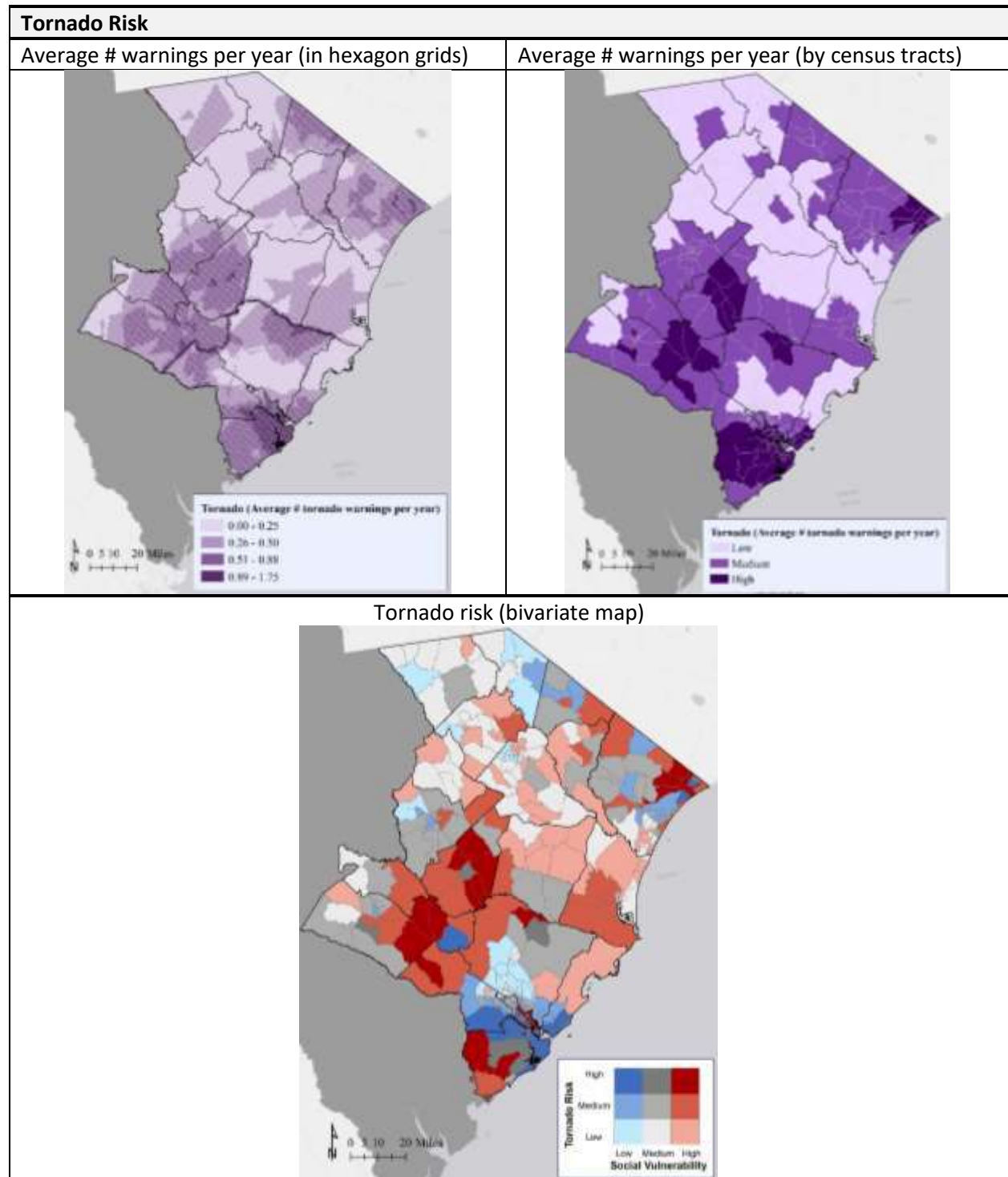
Severe Storm Risk

The hazard classification for severe storm exposure is defined based on the average number of severe storm warnings issued per year.



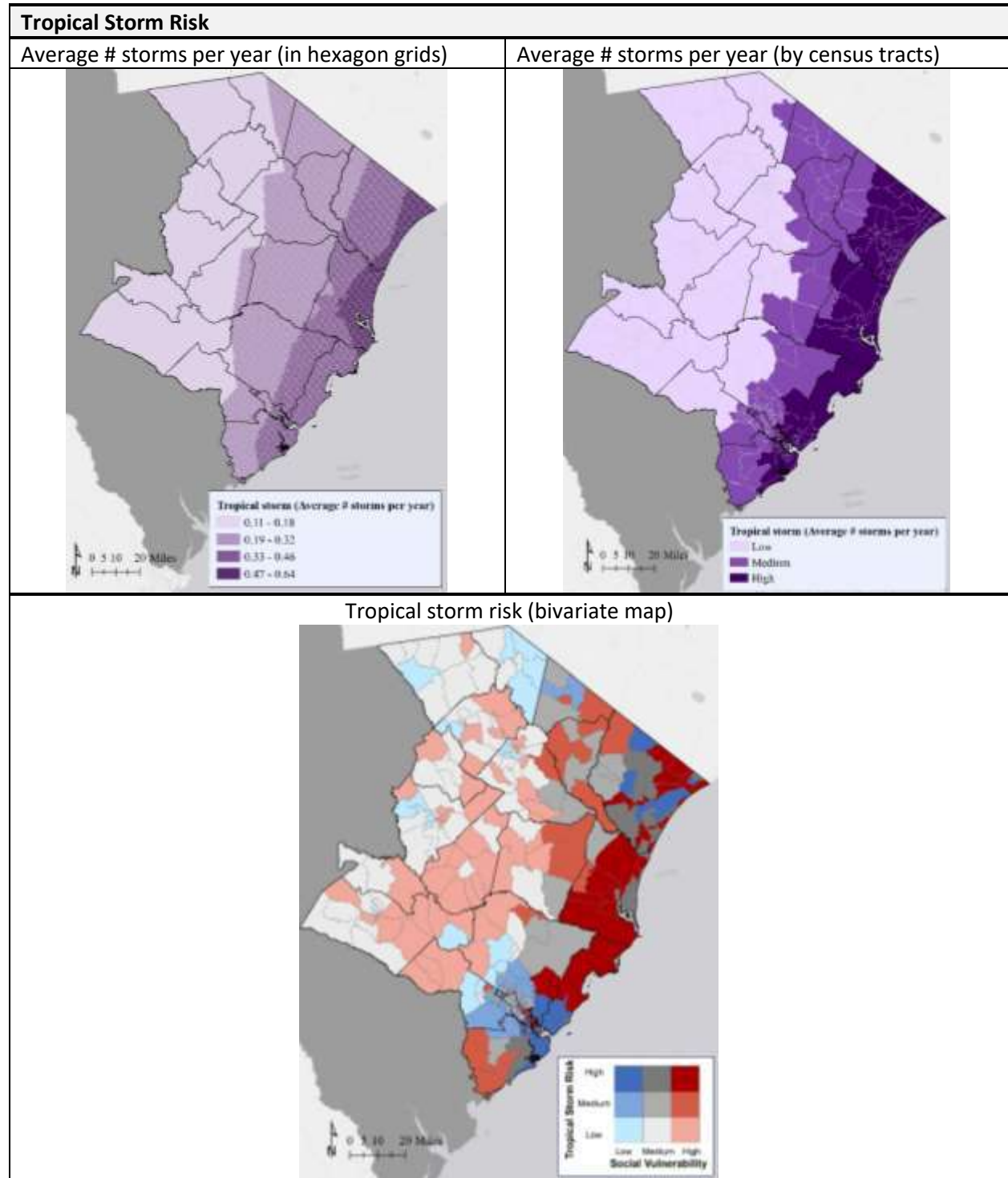
Tornado Risk

A tornado is often generated by thunderstorm activity and is characterized as a violent windstorm with twisting, funnel-shaped cloud extending to the ground. Tornadoes are also associated with landfalling tropical storms and hurricanes. The hazard classification for tornado exposure is defined based on the average number of warnings per year that the tornado warning has been issued.



Tropical Storm (Wind Risk)

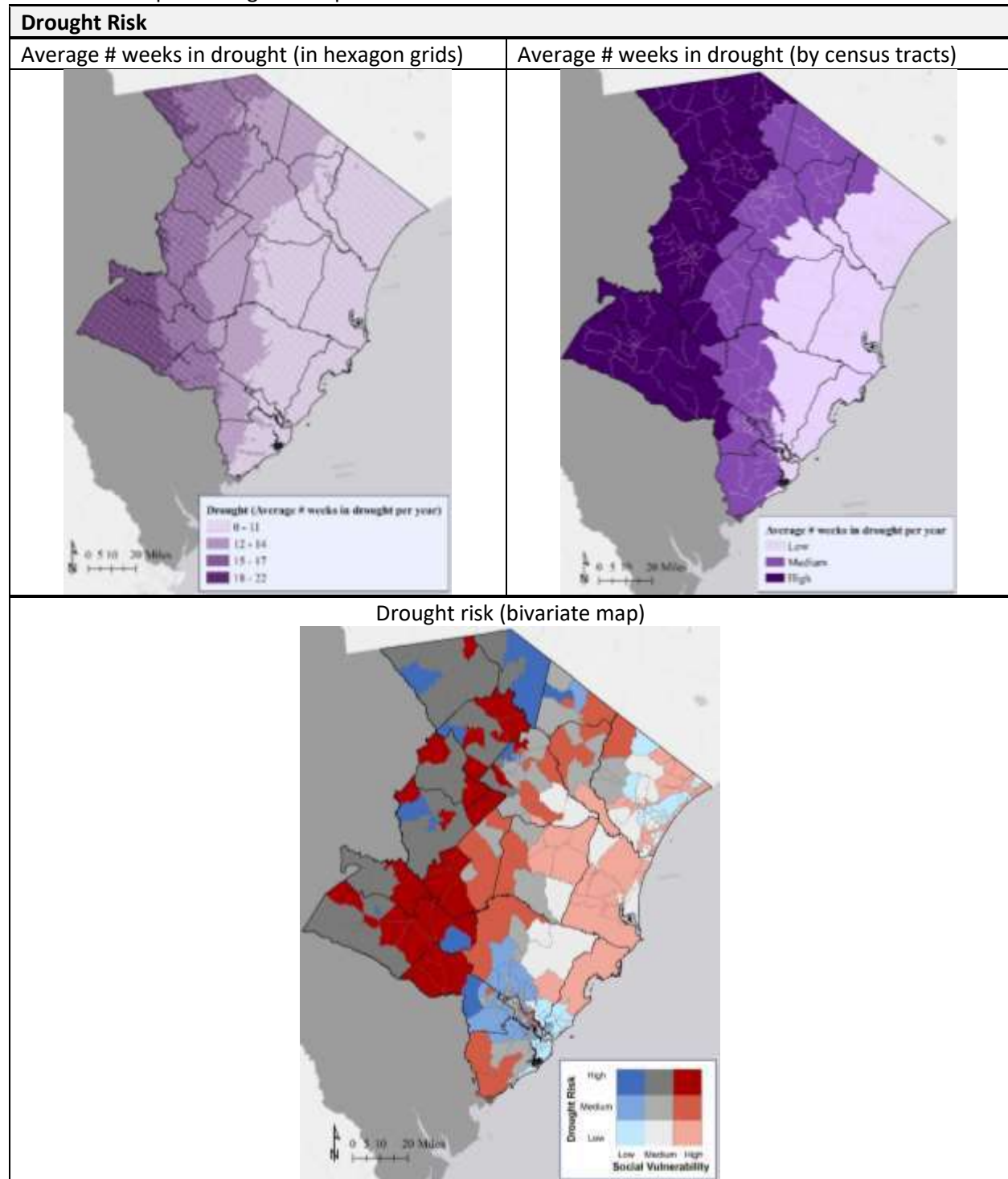
In the Atlantic Ocean tropical cyclones are known as tropical storms or hurricanes based on their wind speeds. The hazard classification for tropical storm exposure is defined based on the average number of days per year that tropical force winds (39-74 mph) were recorded from known hurricane/tropical storm tracks crossing the state.



Other Hazards Affecting South Carolina

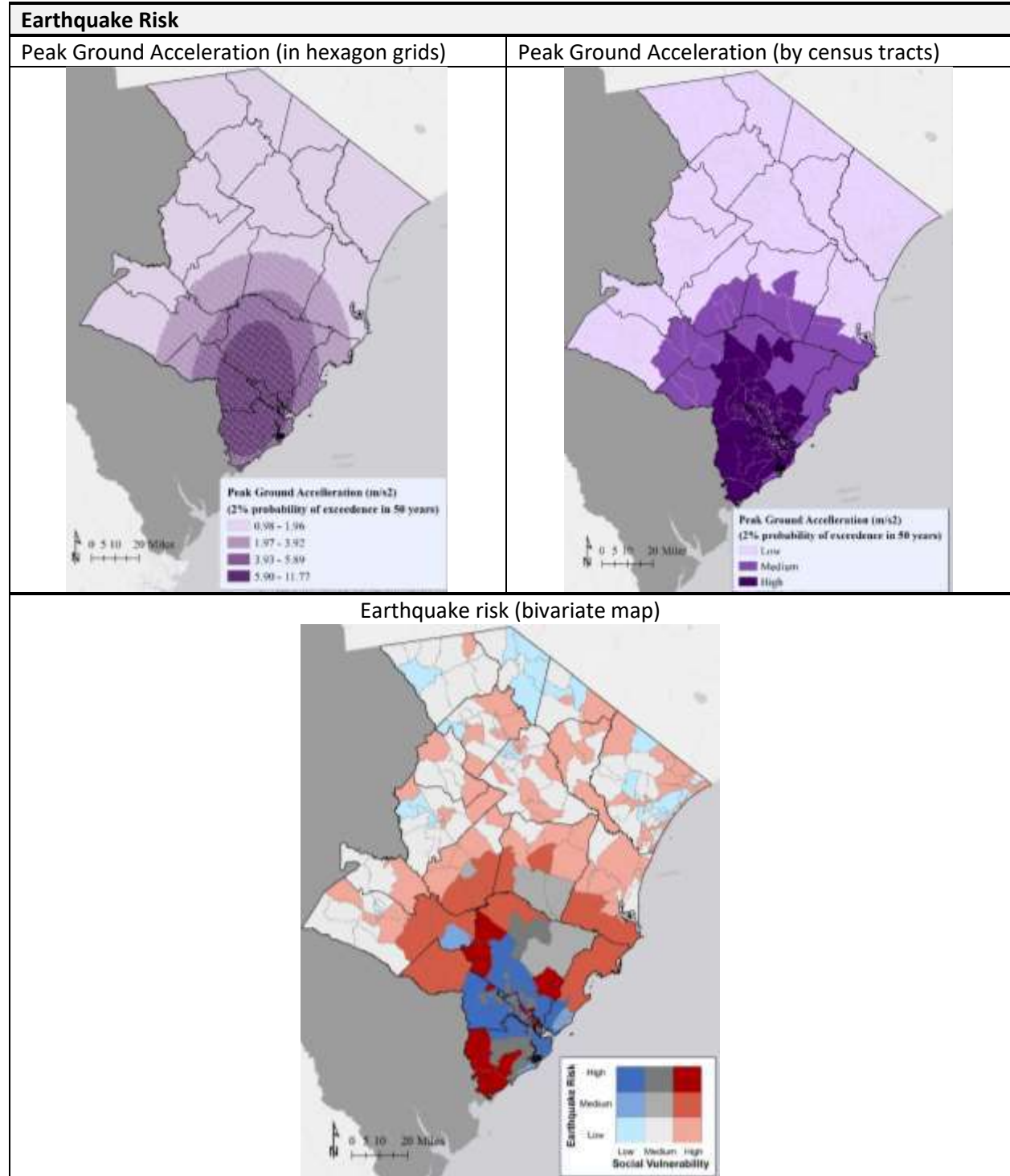
Drought Risk

Droughts are slow onset events compared to some other hazards and develop over longer periods of time. The classification of drought hazard used here is defined as the average number of weeks in drought (severity of D1 or greater on the U.S. Drought Monitor) per year, since year 2000. This is based on historical occurrences of past droughts and probabilities of future occurrences.



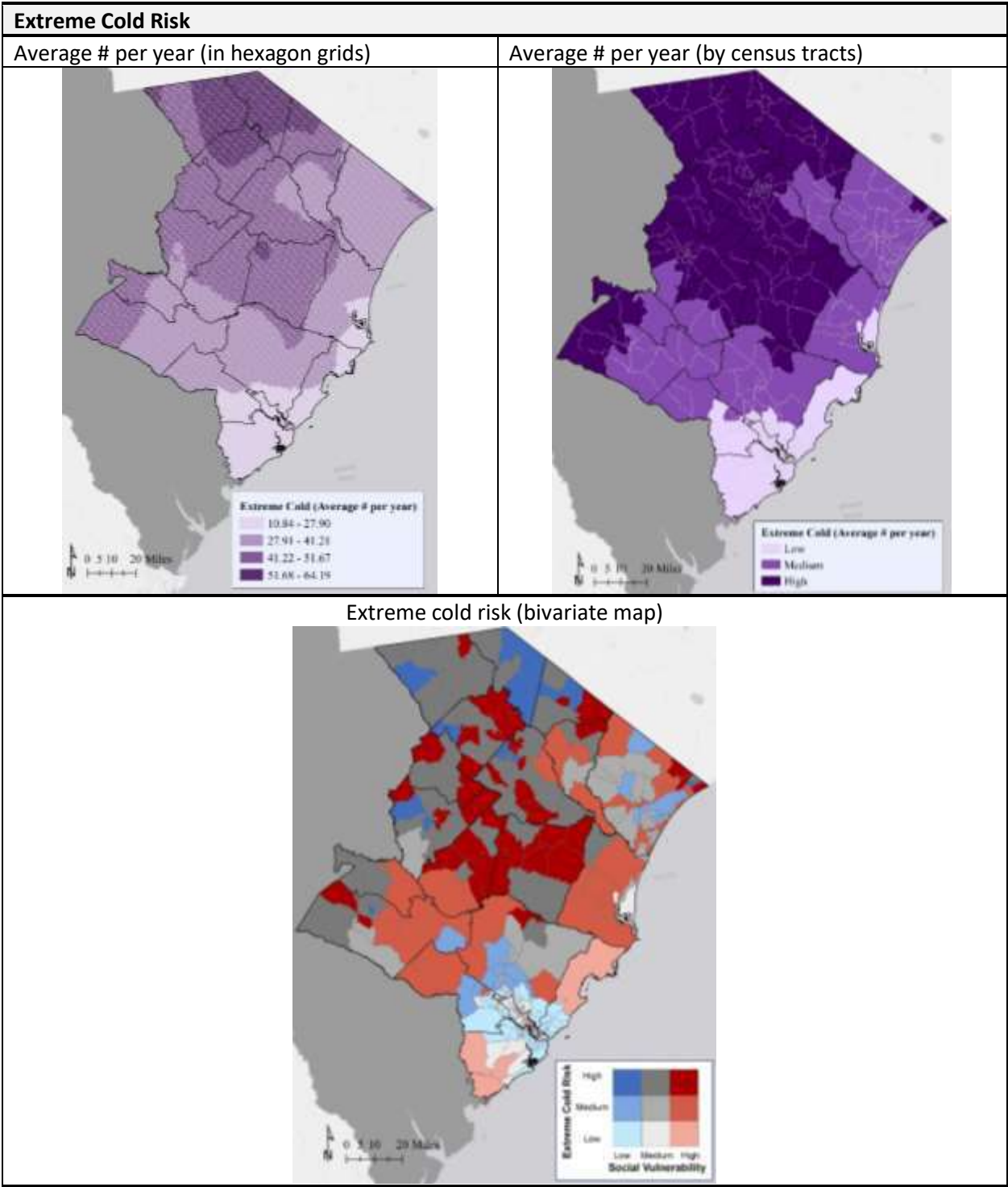
Earthquake Risk

There are about 10 to 15 earthquakes recorded annually recorded in South Carolina (Hazard Mitigation Plan 2018). Earthquakes are low probability- high hazard events and the nine counties in this assessment are susceptible to this hazard. The peak ground acceleration (PGA) with 2% probability of exceedance in 50 years is used to depict the exposure to the earthquake hazard.



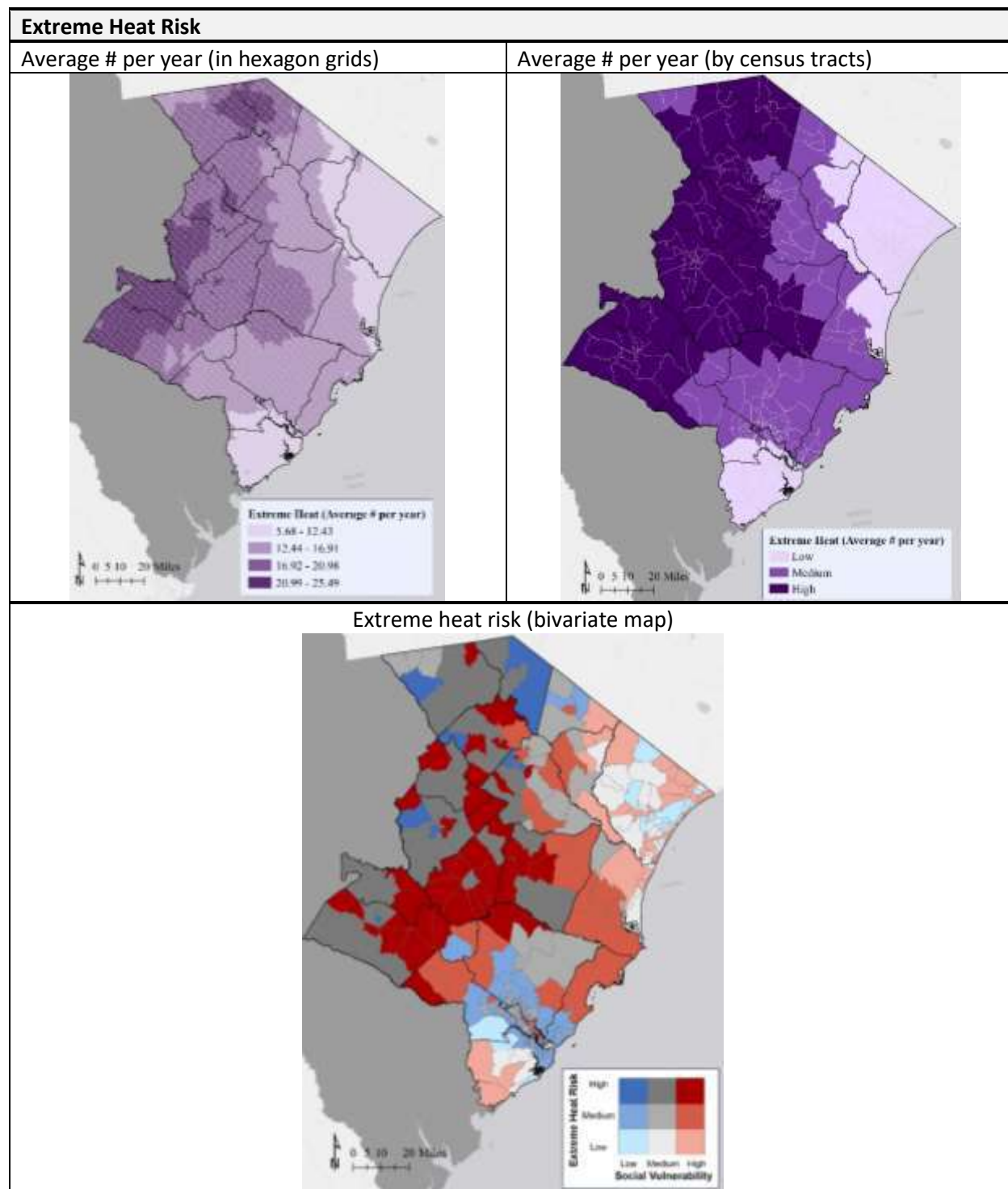
Extreme Cold Risk

The hazard classification for extreme cold exposure is defined based on the average number of days per year that the temperature is below freezing (lower than 32 degrees Fahrenheit).



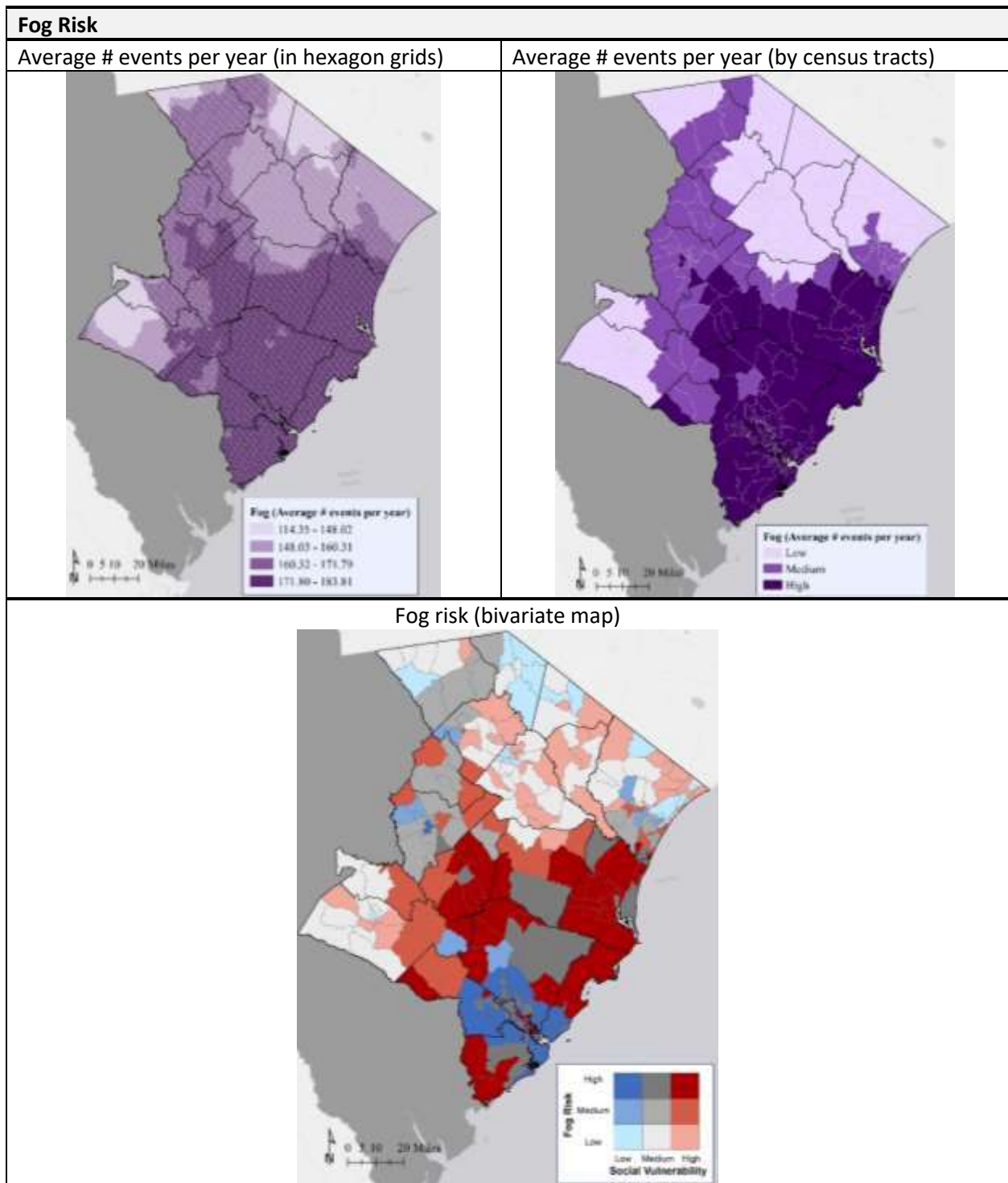
Extreme Heat Risk

The hazard classification for extreme heat exposure is defined based on the average number of days per year that the temperature is above 95 degrees Fahrenheit.



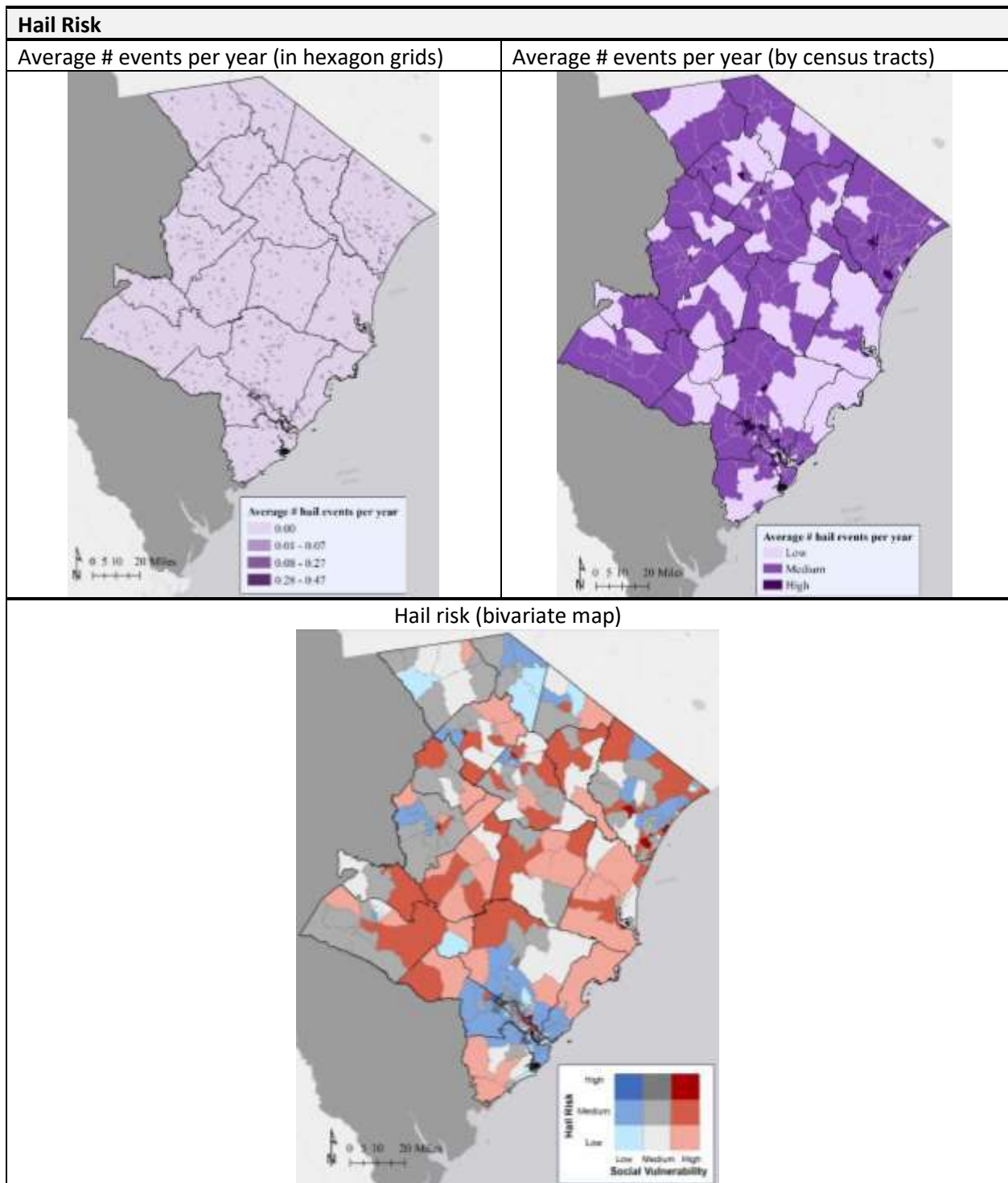
Fog Risk

The hazard classification for fog exposure is defined based on the average number of days per year that the fog event has been recorded.



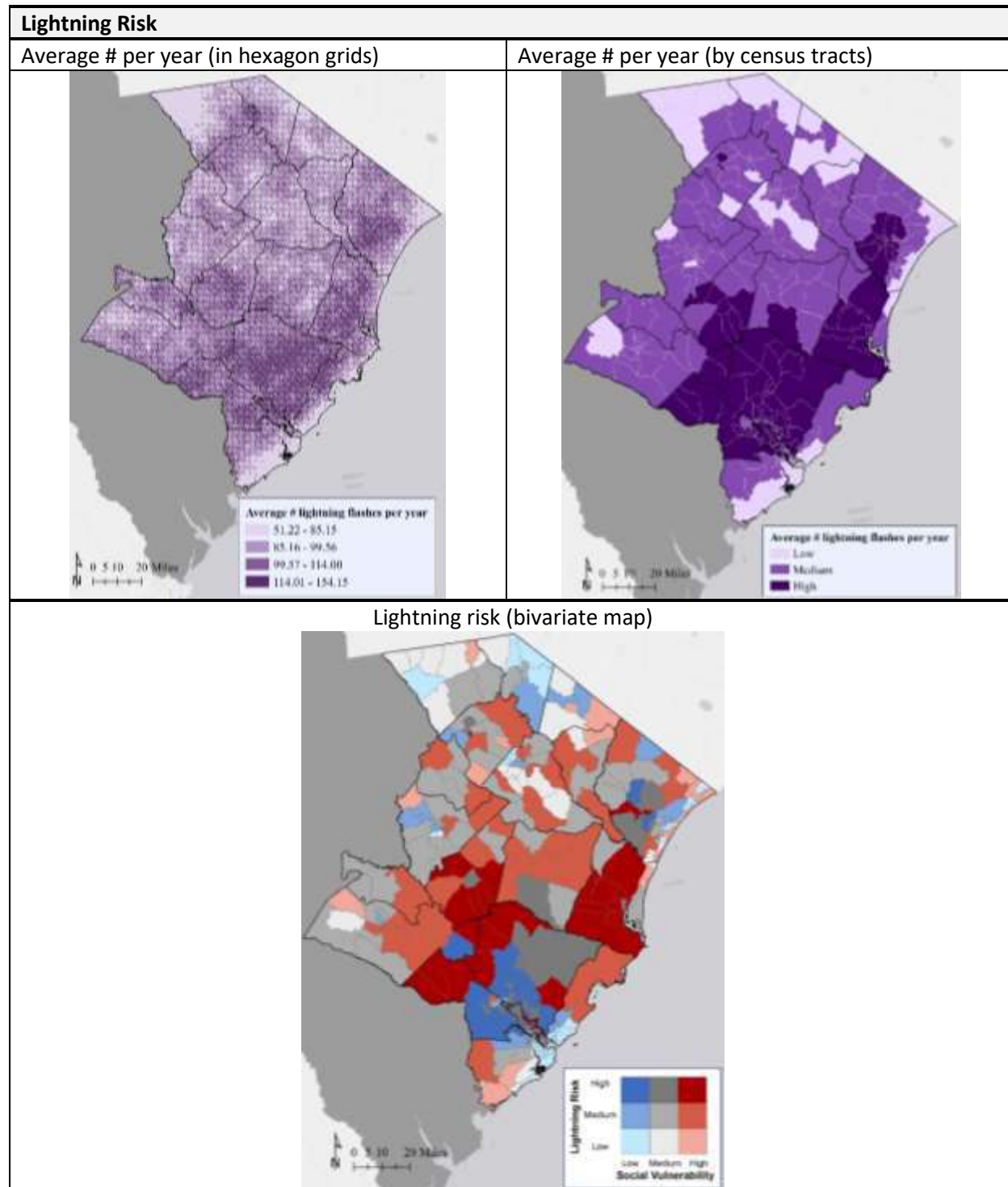
Hail Risk

The hazard classification for hail exposure is defined based on the average number of days per year that the hail event has been recorded.



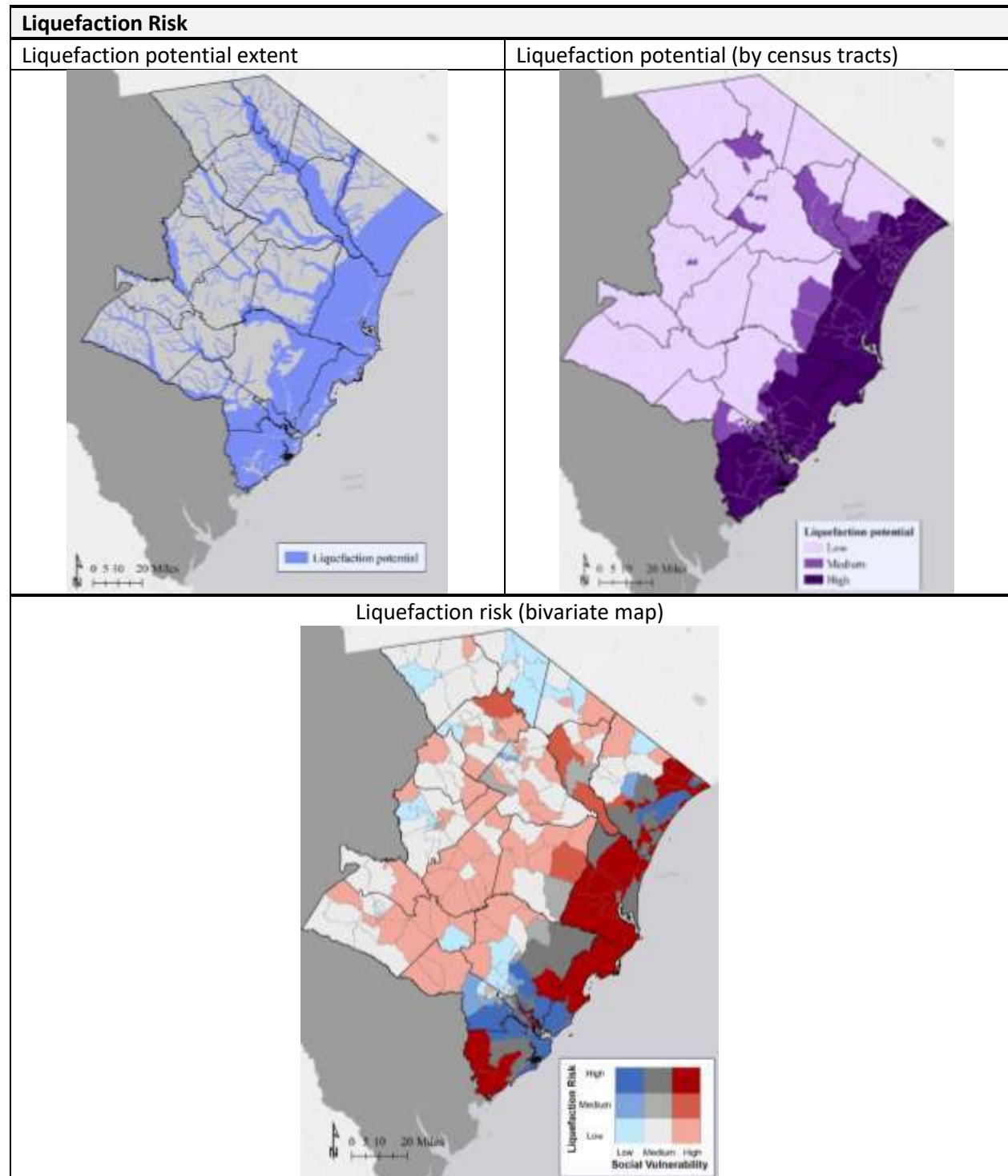
Lightning Risk

The average number of lightning flashes per year (total 27 years) is used to measure the lightning risk. In order to combine all hazards at the census tract level, the average for each tract is measured and assigned as the lightning risk score of 1, 2, or 3, based on the standard deviation from the mean.



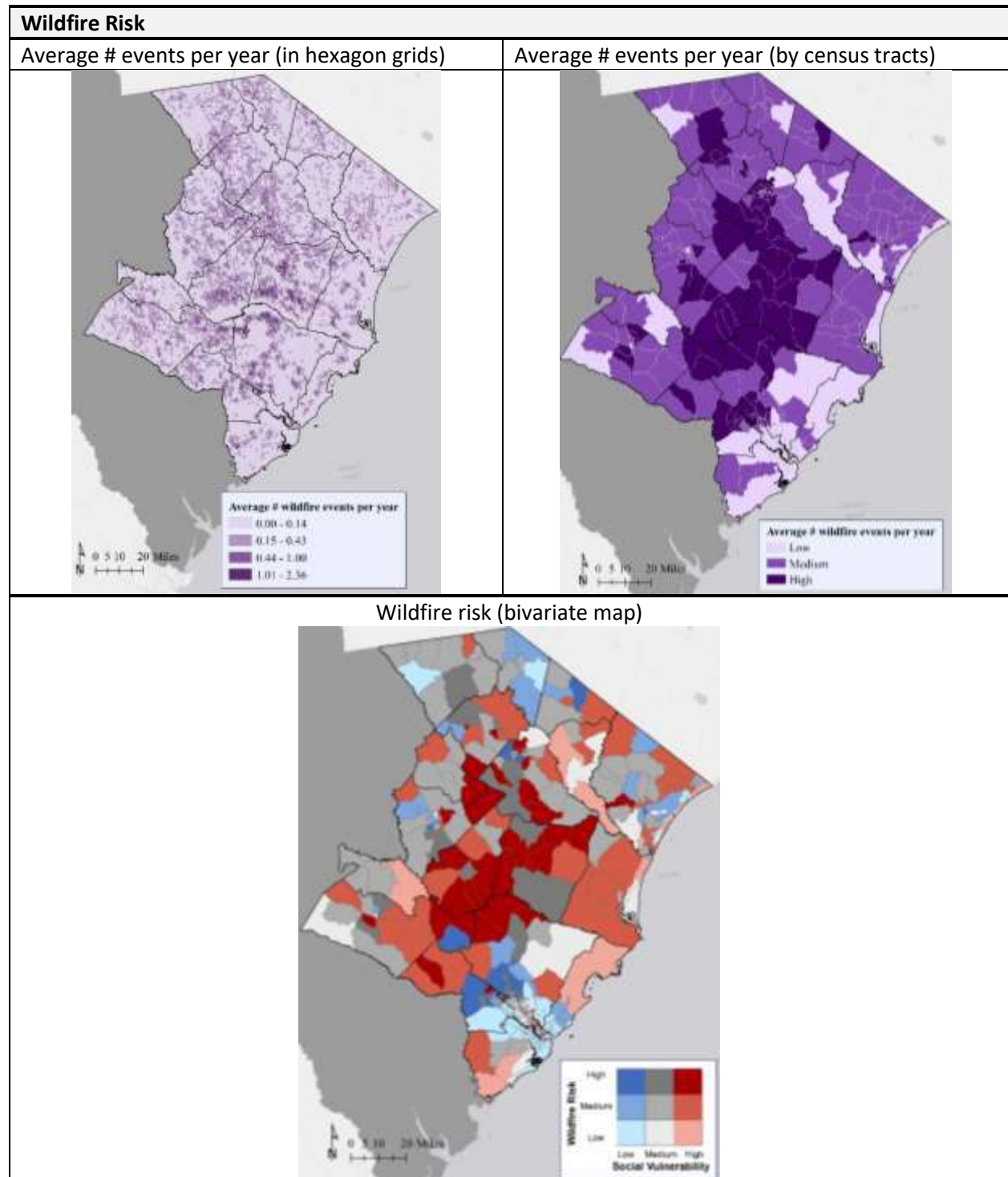
Liquefaction Risk

Liquefaction is the process whereby saturated soils lose strength and the ability to resist shear or the stress from ground shaking during an earthquake. The solid soil behaves like a liquid (e.g. quicksand) and unable to support buildings built on it. The liquefaction potential extent is delineated based on the earthquake hazard and soil conditions and type (sandy, silty, gravelly soils).



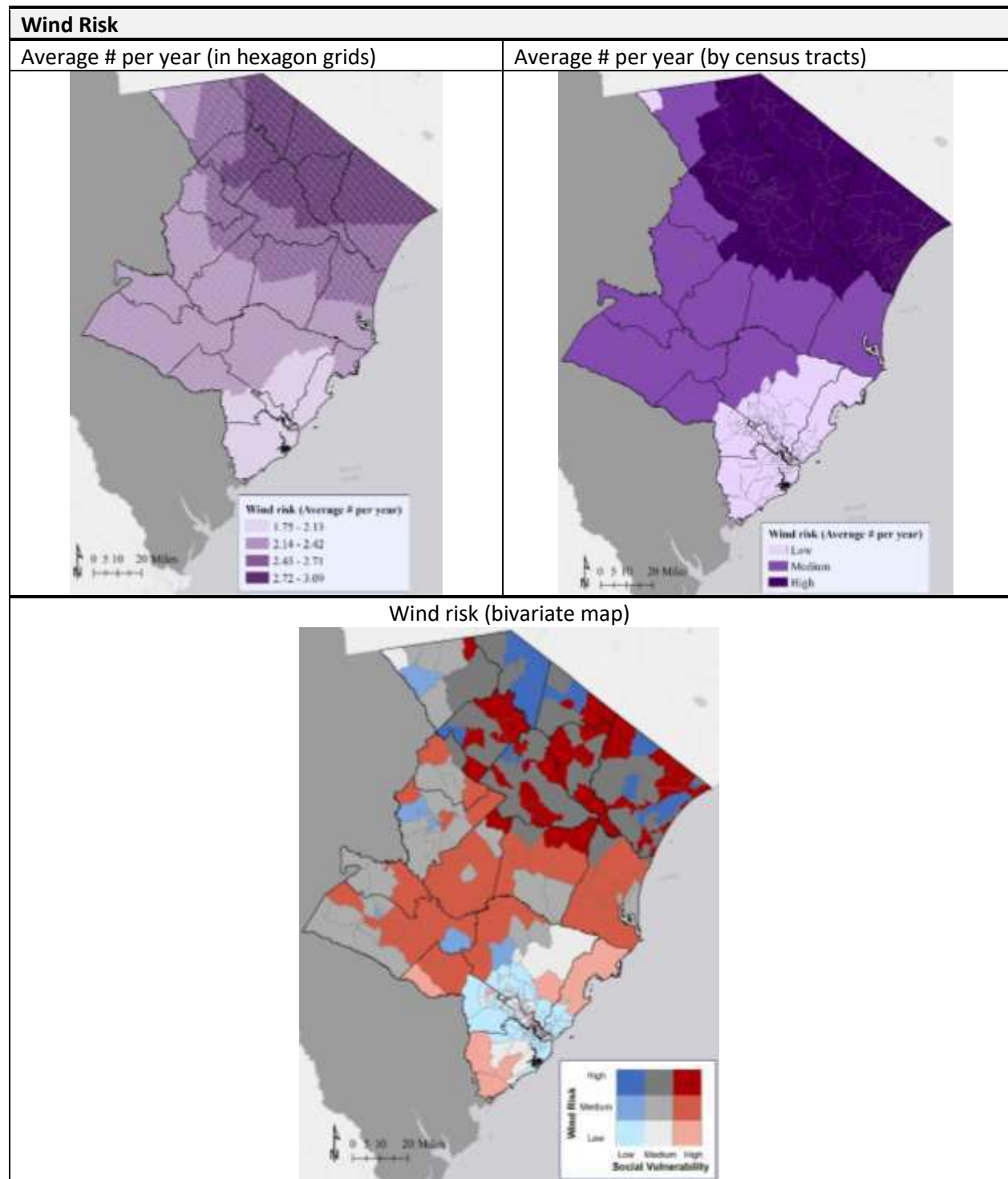
Wildfire Risk

Wildfires are a natural process for the environment to clear dead vegetation, and they can be human-cause or from lightning strikes. Fire danger is highest in late winter and early spring. The hazard classification for wildfire exposure is defined based on the average number of recorded wildfire events per year, since year 1988.



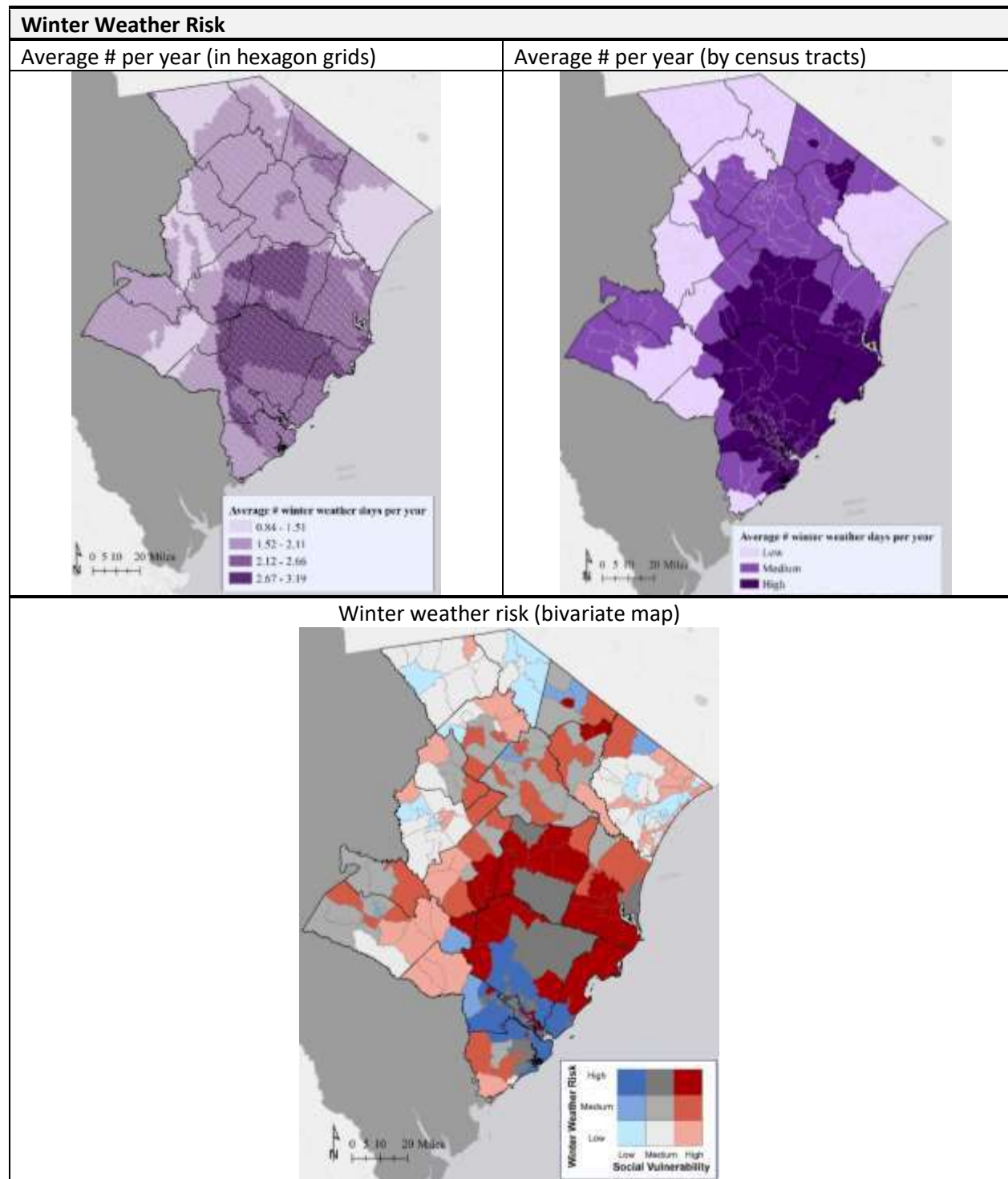
Wind Risk

The hazard classification for wind risk is based on the average number of days per year with recorded high winds (> 58 mph gusts excluding hurricane and tornadic winds).



Winter Weather Risk

The hazard classification for winter weather exposure is defined based on the average number of days per year that the winter weather (snow, ice, sleet, freezing rain) conditions were recorded.



Total Hazard Risk

The total hazard risk combines all the hazards described above into a comprehensive view of risk for the CDBG-MIT assessment region, by census tracts. This risk map was overlaid with social vulnerability to determine the intersection of the highest risk census tracts with those having higher levels of social vulnerability (Figure 6).

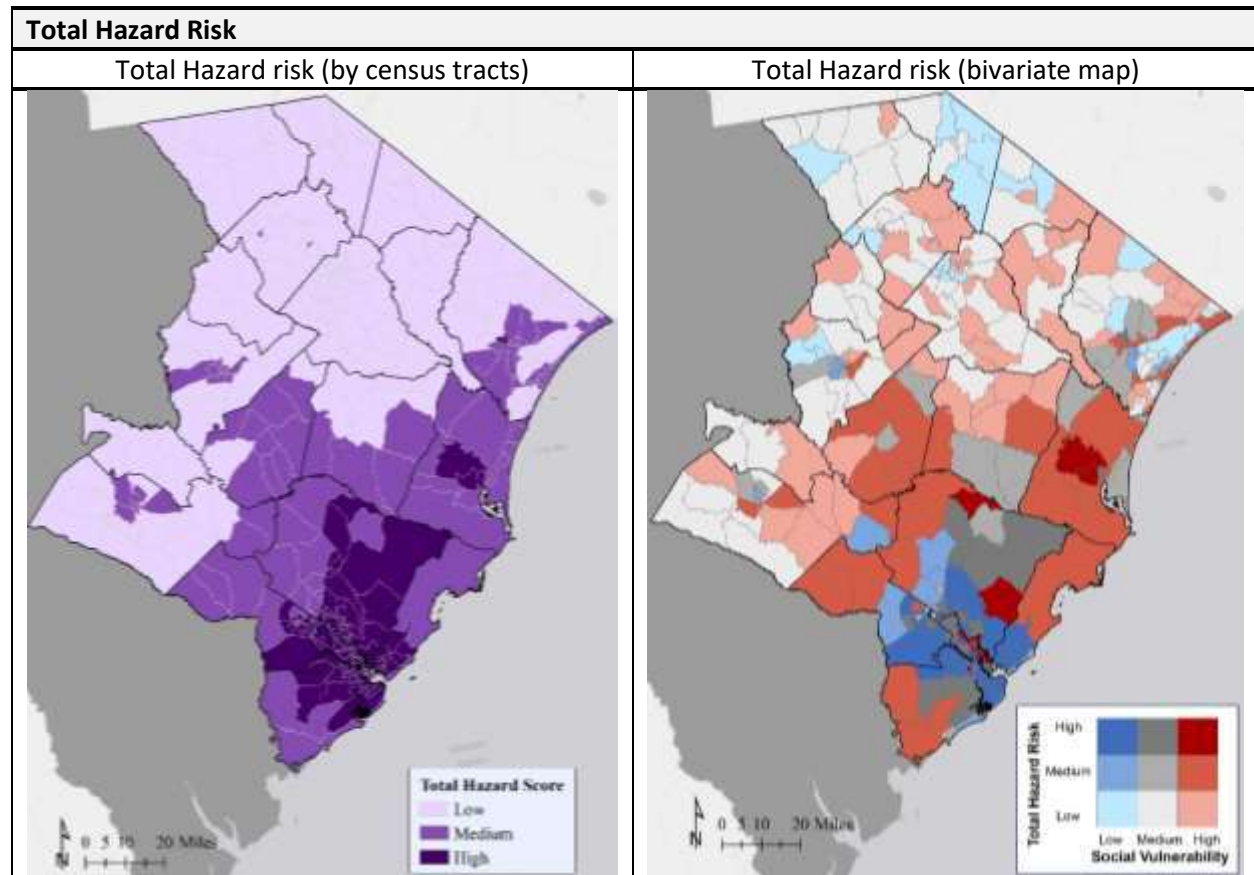


Figure 6 Total hazard risk and social vulnerability

The highest risk and most vulnerable census tracts (shown in dark red) are found in four primary areas. These include the Georgetown region bordering the Santee River, in the St. Stephens area in Berkeley County, in the Tarry Town and Pimlico communities near the Cooper River in Berkeley County, and in the Charleston neck and North Charleston region in Charleston and Berkeley Counties.

The Impact of Flood Hazards on the Region

From 2000-2018 in this 17-county region, property and crop losses totaled over \$625 million, of which 70% were due to flooding or flood-related events (e.g. severe thunderstorms, tropical storms/hurricanes).¹³ The repeated episodes of catastrophic flooding not only affected the region in 2015 but in subsequent years as well. The repeat and devastated effects of flooding along the coast, rivers, and

¹³ Data compiled from SHELdUS Hazards & Vulnerability Research Institute, 2019. Computed property and crop losses from 2000-2018 from Spatial Hazard Events and Loss Database (SHELdUS) v. 18. Accessed on December 1, 2019, <https://sheldus.org>

inland low-lying interior areas prompted Governor McMaster to create the South Carolina Floodwater Commission on October 15, 2018. According to the Executive Order 2018-50, “The Commission shall identify short-term and long-term recommendations to alleviate and mitigate flood impacts to this State, with special emphasis on cities, communities and enterprises located on or near the coast and rivers.”¹⁴

As shown in the summary map below (Figure 7) the highest risk of flooding is along the coast and in the inland waterways (left). More significant is the geographic relationship between high to moderate flood risk areas and higher levels of social vulnerability (right). Together both parameters illustrate the need for longer-term mitigation resources, especially for these vulnerable populations that are most affected.

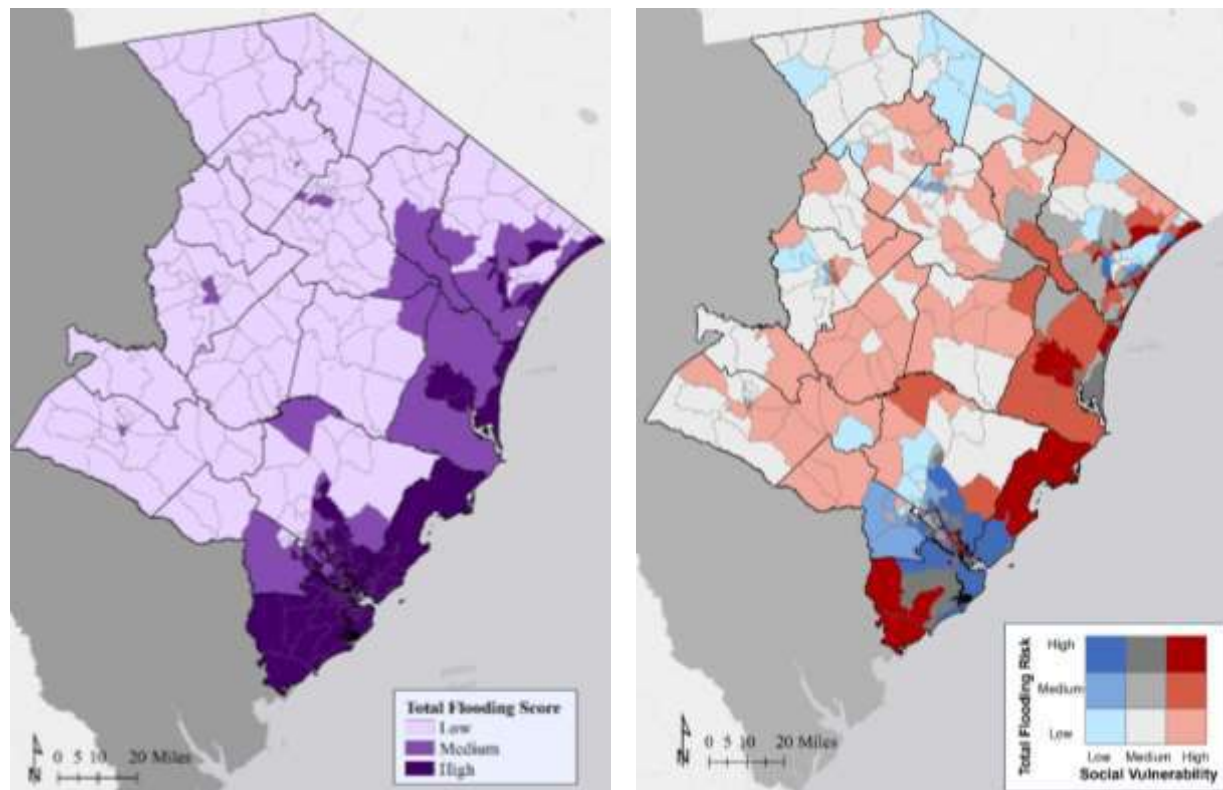


Figure 7 Total flood risk (riverine, flash flooding, storm surge) (left) and then in comparison with social vulnerability (right) at the census tract level

Residential Recovery Impact and Unmet Needs Profiles

Immediately after a hazard event, the primary resources for the initial recovery of affected residents are FEMA’s Individual Assistance (IA) through the Individuals and Households Program (IHP), the National Flood Insurance (NFIP) program, low-interest loans from the Small Business Administration (SBA), and

¹⁴ Executive Order 2018-50, Authorizing of the South Carolina Floodwater Commission, <https://governor.sc.gov/sites/default/files/Documents/Executive-Orders/EO-2018-50.pdf>, Accessed December 1, 2019. See also the Commission’s web site <https://governor.sc.gov/executive-branch/south-carolina-floodwater-commission>

over the longer term, HUD CDBG-DR funding. During the 2015 Flood Event, the State of South Carolina created a Housing Trust Fund (HTF) Flood Initiative.¹⁵ The HTF secured funding from the state, non-profit, and private donors to assist low-income homeowners in the declared counties with immediate repairs to damage that would worsen without such prompt financial assistance. Determining the success of federal and state recovery efforts and delineating the additional unmet individual homeowner mitigation needs is a crucial part of HUD CDBG-MIT analysis.

This section examines the federal and state resources (or recovery safety nets)¹⁶ available to affected residents. We used a county-level scale in measuring success in repairing or replacing homes. A more detailed examination using census tract analyses appears at the end of this section, showing the relationship between the availability of the recovery and short-term mitigation resources and the residual unmet mitigation needs.

FEMA Individual Assistance for Homeowners

Following the 2015 flood, around 75,510 residents applied for FEMA individual assistance, but only 24% of the applicants received housing assistance to bring their home to a safe, sanitary, functional condition.¹⁷ After Hurricane Matthew affected roughly the same area, 46,686 residents applied for IA statewide, with only 19% receiving assistance.¹⁸ Within the seventeen county region, the proportions are better: for the 2015 floods there were 52,621 applicants, with 29% receiving housing assistance, and after Hurricane Matthew, there were 27,198 applicants, 28% receiving housing assistance. The applicants were concentrated in the Pee Dee and Santee watersheds (Figure 8).¹⁹

There are many reasons for denying claims (clerical errors, inconsistent information on owner's name and address, proof of occupancy, identity verification), but one significant reason is a claim may be denied based on the results from attributing damage to a specific event. In other words, FEMA damage inspectors may judge that a dwelling had a pre-existing deteriorated condition due to deferred maintenance or other pre-storm conditions and therefore not damaged by the present flood/storm. The 2015 and 2016 HUD CDBG-DR Action Plans for Recovery suggest that such eligibility determinations and claim denials often disproportionately affect low to moderate income (LMI) households.²⁰

¹⁵ South Carolina Disaster Recovery Office, 2016. South Carolina Action Plan for Disaster Recovery Amendment 8. Accessed November 22, 2019. <https://scstormrecovery.com/wp-content/uploads/2019/07/SC-Severe-Storm-Amendment-8-6-26-19.pdf>

¹⁶ Emrich, C.T., E. Tate, S.E. Larson, and Y. Zhou, 2019. Measuring social equity in flood recovery funding, *Environmental Hazards* <https://doi.org/10.1080/17477891.2019.1675578>.

¹⁷ Op. cit., Note 15.

¹⁸ South Carolina Disaster Recovery Office, 2017. *South Carolina Hurricane Matthew Action Plan*. Accessed November 22, 2019. <https://scstormrecovery.com/wp-content/uploads/2017/07/SC-Hurricane-Matthew-Action-Plan-Revised-HUD-Submittal-5-31-17-1-1.pdf>

¹⁹ Differences in the figures between the reporting in approved HUD Disaster Recovery Plans for the 2015 floods and 2016 Hurricane Matthew and the numbers here are due to the lag in identifying and qualifying applicants for assistance.

²⁰ Op.cit., Note 15 and Note 18.

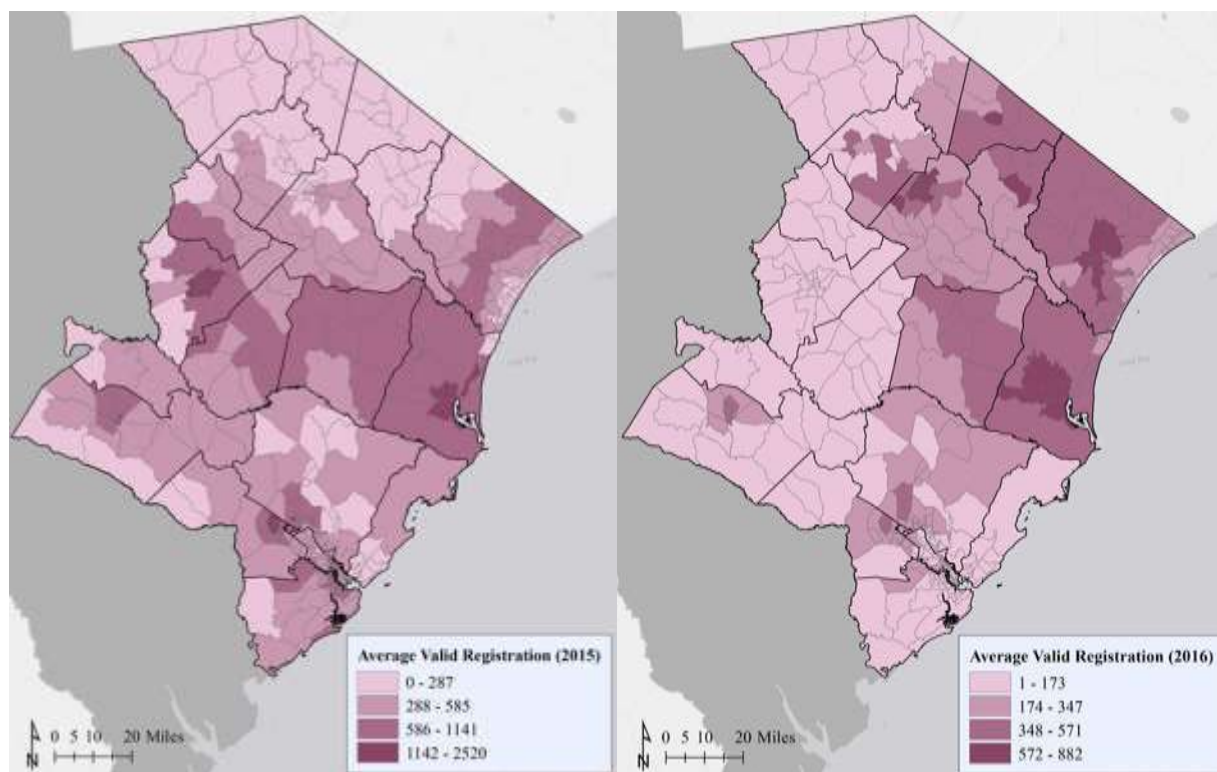


Figure 8 Number of valid FEMA IA registrants by census tract

As of March 2017, 19,446 homeowners statewide received FEMA IHP flood damage funding for home repairs (15,628 for DR-4241, 3,818 for DR-4286).²¹ Updated information (November 2019) shows that for the Pee Dee and Santee watersheds, 15,509 homeowners received FEMA housing assistance for DR-4241, and 7,589 for DR-4286.²² Chesterfield County had the lowest percentage rate of success in receiving IHP funding but also had the lowest damage amount based on inspections (Table 3). The highest rate of success was in Williamsburg County.

Table 3 FEMA Housing Assistance Program Support for PDD-4241 and PDD 4286 by County

| PDD 4241 Severe Storms and Floods 2015 | | | | | | |
|--|-------------|------------|-------------------|----------------------------------|----------------------------|------------------|
| County | #Registrant | #Inspected | Total Damage (\$) | #Approved for FEMA Assistance | Total Approved IHP (\$) | #Not Approved |
| Berkeley | 3807 | 3253 | \$2,790,796 | 1095 | \$2,982,183 | 2712 |
| Calhoun | 679 | 584 | \$359,285 | 162 | \$314,747 | 517 |
| Charleston | 7879 | 6525 | \$7,880,394 | 1846 | \$6,040,991 | 6033 |
| Chesterfield | 7 | 7 | \$9,125 | 3 | \$9,731 | 4 |
| Clarendon | 3014 | 2594 | \$1,934,068 | 919 | \$2,275,394 | 2095 |

²¹ FEMA, 2017. Individuals and Households Program (IHP) Flood Damage, Accessed 11/27/19. Data reflect counts as of 3/10/2017. <https://www.fema.gov/media-library/assets/documents/130225>.

²² FEMA, 2019. Housing Assistance Data, Accessed 11/27/19. Data reflect counts as of 11/25/2019 <https://www.fema.gov/media-library/assets/documents/34758>

| | | | | | | |
|--------------|-------|-------|--------------|-------|--------------|-------|
| Darlington | 2178 | 1915 | \$1,202,508 | 668 | \$1,408,421 | 1510 |
| Dillon | 29 | 29 | \$12,695 | 6 | \$19,712 | 23 |
| Dorchester | 2992 | 2523 | \$3,264,494 | 830 | \$2,709,962 | 2162 |
| Florence | 5248 | 4526 | \$5,034,102 | 1718 | \$4,982,543 | 3530 |
| Georgetown | 3509 | 3014 | \$8,141,573 | 1071 | \$6,251,590 | 2438 |
| Horry | 4495 | 3724 | \$4,118,081 | 1255 | \$3,885,350 | 3240 |
| Lee | 949 | 843 | \$435,257 | 244 | \$541,015 | 705 |
| Marion | 823 | 723 | \$289,280 | 164 | \$338,373 | 659 |
| Orangeburg | 5193 | 4503 | \$2,698,477 | 1326 | \$2,521,110 | 3867 |
| Sumter | 7319 | 6195 | \$10,740,457 | 2591 | \$11,539,535 | 4728 |
| Williamsburg | 4500 | 3925 | \$6,014,928 | 1611 | \$6,331,885 | 2889 |
| Total | 52621 | 44883 | \$54,925,520 | 15509 | \$52,152,542 | 37112 |

| PDD 4286 Hurricane Matthew 2016 | | | | | | |
|---------------------------------|-------------|------------|-------------------|-------------------------------|-------------------------|---------------|
| County | #Registrant | #Inspected | Total Damage (\$) | #Approved for FEMA Assistance | Total Approved IHP (\$) | #Not Approved |
| Berkeley | 1364 | 1011 | \$751,691 | 242 | \$763,150 | 1122 |
| Calhoun | 103 | 80 | \$75,210 | 25 | \$73,625 | 78 |
| Charleston | 2224 | 1567 | \$2,568,503 | 492 | \$1,628,588 | 1732 |
| Chesterfield | 216 | 153 | \$105,387 | 41 | \$107,022 | 175 |
| Clarendon | 559 | 465 | \$350,920 | 150 | \$325,978 | 409 |
| Darlington | 1313 | 968 | \$746,107 | 225 | \$534,963 | 1088 |
| Dillon | 1820 | 1489 | \$2,239,273 | 570 | \$2,007,019 | 1250 |
| Dorchester | 1263 | 790 | \$1,112,580 | 217 | \$821,555 | 1046 |
| Florence | 4079 | 3030 | \$4,143,270 | 1156 | \$3,334,938 | 2923 |
| Georgetown | 1782 | 1463 | \$1,695,473 | 574 | \$1,469,018 | 1208 |
| Horry | 4693 | 3369 | \$8,040,238 | 1337 | \$5,657,053 | 3356 |
| Lee | 222 | 172 | \$53,225 | 32 | \$41,926 | 190 |
| Marion | 3175 | 2516 | \$10,947,553 | 1243 | \$8,914,256 | 1932 |
| Marlboro | 409 | 322 | \$345,886 | 90 | \$305,297 | 319 |
| Orangeburg | 1601 | 1174 | \$1,073,721 | 348 | \$949,689 | 1253 |
| Sumter | 617 | 476 | \$493,362 | 166 | \$525,438 | 451 |
| Williamsburg | 1758 | 1509 | \$1,923,017 | 681 | \$1,935,950 | 1077 |
| Total | 27198 | 20554 | \$36,665,416 | 7589 | \$29,395,464 | 19609 |

Source: FEMA Housing Assistance Program, Updated November 25, 2019, footnote 31.

The success ratio in receiving FEMA IHP resources only tells part of the story of the mitigation and resilience needs assessment. Another consideration is the actual dollar amount of the resources relative to the damage assessment by FEMA. Table 4 highlights an estimated unmet financial need in excess of \$10 million for immediate repairs per the IHP program based on the difference between the approved amounts minus the total damage.

Table 4 Difference between Total Damages and Approved FEMA IHP for DR-4241 and DR-4286

| County | Total Damages (\$) | Total (\$) Approved IHP | Unmet FEMA Need (\$) |
|--------------|-----------------------|----------------------------|-------------------------|
| Berkeley | \$ 3,542,487 | \$ 3,745,333 | \$ 202,846 |
| Calhoun | \$ 434,495 | \$ 388,372 | \$ -46,123 |
| Charleston | \$ 10,448,897 | \$ 7,669,579 | \$ -2,779,318 |
| Chesterfield | \$ 114,512 | \$ 116,753 | \$ 2,241 |
| Clarendon | \$ 2,284,988 | \$ 2,601,372 | \$ 316,384 |
| Darlington | \$ 1,948,615 | \$ 1,943,384 | \$ -5,231 |
| Dillon | \$ 2,251,968 | \$ 2,026,731 | \$ -225,237 |
| Dorchester | \$ 4,377,074 | \$ 3,531,517 | \$ -845,557 |
| Florence | \$ 9,177,372 | \$ 8,317,481 | \$ -859,891 |
| Georgetown | \$ 9,837,046 | \$ 7,720,608 | \$ -2,116,438 |
| Horry | \$ 12,158,319 | \$ 9,542,403 | \$ -2,615,916 |
| Lee | \$ 488,482 | \$ 582,941 | \$ 94,459 |
| Marion | \$ 11,236,833 | \$ 9,252,629 | \$ -1,984,204 |
| Marlboro | \$ 345,886 | \$ 305,297 | \$ -40,589 |
| Orangeburg | \$ 3,772,198 | \$ 3,470,799 | \$ -301,399 |
| Sumter | \$ 11,233,819 | \$ 12,064,973 | \$ 831,154 |
| Williamsburg | \$ 7,937,945 | \$ 8,267,835 | \$ 329,890 |
| Total | \$ 91,590,936 | \$ 81,548,006 | \$ -10,042,930) |

Source: Computed from Table 6.

National Flood Insurance Policy Coverage

Historically, South Carolina has relatively little uptake of NFIP flood policies despite the flood-prone nature of both coastal and riverine environments. In the Pee Dee and Santee watersheds, there are 455,615 owner-occupied housing units, and 323,544 NFIP policies as of July 2019. In other words, roughly 71% of all owner-occupied housing units have NFIP policies in the assessment area.²³ The majority of these policies are in Horry and Charleston Counties. For the 2015 and 2016 flood events, there were 9,263 claims (2.9% of the policies in effect in the watersheds) totaling nearly \$109 million in building and contents claims, or roughly an average of \$11,763 per claim. Charleston, Horry, and Georgetown counties recorded the highest payouts (Table 5).

Table 5 NFIP Claims for 2015-2016 for Pee Dee and Santee Watershed Counties

| County | Policy count | Amount paid on building claim | Amount paid on contents claim |
|------------|--------------|-------------------------------|-------------------------------|
| Berkeley | 150 | \$2,597,623.59 | \$407,999.49 |
| Charleston | 2349 | \$30,367,631.47 | \$2,720,883.90 |
| Clarendon | 11 | \$178,014.30 | \$13,468.30 |
| Darlington | 15 | \$256,904.03 | \$25,731.59 |

²³ Data downloaded from OpenFEMA claims and policy data, published July 2019, <http://https://www.fema.gov/data-feeds>

| County | Policy count | Amount paid on building claim | Amount paid on contents claim |
|--------------|--------------|-------------------------------|-------------------------------|
| Dillon | 25 | \$768,398.65 | \$94,566.86 |
| Dorchester | 335 | \$4,857,812.88 | \$967,569.63 |
| Florence | 113 | \$1,781,710.76 | \$308,326.77 |
| Georgetown | 1046 | \$15,667,205.97 | \$2,658,440.04 |
| Horry | 4910 | \$26,060,973.56 | \$4,636,055.53 |
| Lee | 5 | \$36,734.70 | \$12,984.67 |
| Marion | 102 | \$6,410,833.91 | \$895,669.46 |
| Marlboro | 1 | \$9,564.22 | - |
| Orangeburg | 38 | \$664,480.22 | \$156,237.69 |
| Sumter | 123 | \$4,162,841.04 | \$295,135.49 |
| Williamsburg | 40 | \$1,664,026.73 | \$283,388.41 |
| Total | 9263 | \$95,484,756.03 | \$13,476,457.83 |

Source: OpenFEMA Claims and Policy Data (see footnote 23).

As shown in Figure 9, the majority of NFIP claims were from the coastal census tracts in Horry, Georgetown, and Charleston Counties.

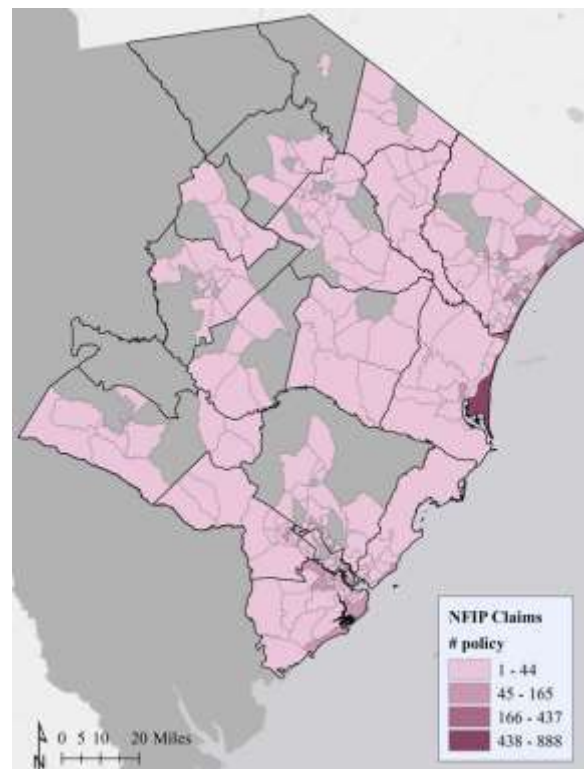


Figure 9 Distribution of NFIP Claims by Census Tract

Small Business Administration (SBA) Loans

After the 2015 floods, there were 3,090 SBA loans statewide totaling over \$76 million, with an additional 1,434 loans after Hurricane Matthew (\$33.6 million).²⁴ In the Pee Dee and Santee watersheds, there

²⁴ Op. cit. Note 15, Note, 18.

were significantly fewer SBA loans (376) for both events.²⁵ The majority of the loans were in Charleston, Horry, Berkeley, and Orangeburg Counties (Table 6).

Table 6 Number of SBA Loans for Selected South Carolina Counties by Event

| County | # SBA Home Loans DR-4241 | # SBA Home Loans DR-4286 |
|--------------|-----------------------------|-----------------------------|
| Berkeley | 19 | 15 |
| Calhoun | 6 | 3 |
| Charleston | 45 | 24 |
| Chesterfield | 0 | 3 |
| Clarendon | 10 | 5 |
| Darlington | 12 | 7 |
| Dillon | 0 | 8 |
| Dorchester | 13 | 11 |
| Florence | 15 | 13 |
| Georgetown | 7 | 5 |
| Horry | 19 | 21 |
| Lee | 11 | 5 |
| Marion | 5 | 10 |
| Marlboro | 0 | 4 |
| Orangeburg | 19 | 14 |
| Sumter | 15 | 9 |
| Williamsburg | 13 | 10 |
| Total | 209 | 167 |

HUD CDBG-DR Funding

The CDBG-DR funding assistance is specifically designed to benefit low and moderate income (LMI) persons. The South Carolina Disaster Recovery Office (SCDRO) engaged in an expeditious effort to identify applicants and monitor cases as they progressed through the residential recovery program through a disaster case-management effort called Palmetto Disaster Recovery.

As of September 2019, there were 3,820 active construction projects statewide, with 2,372 already completed (62%). Within the 17 county region, there were 3,670 active projects with 2,332 projects completed (63.5%, see Table 7).

²⁵ SBA, 2019. Open Data Sources, SBA Disaster Loan Data FY 2016 and 2017. Accessed 11/27/19.
<https://www.sba.gov/about-sba/sba-performance/open-government/digital-sba/open-data/open-data-sources>

Table 7 CDBG-DR Status of All Active and Approved Projects in South Carolina

| County | Active Projects (counts) | Completed Projects (counts) | % Completed |
|--------------|-----------------------------|--------------------------------|-------------|
| Berkeley | 229 | 149 | 65.1 |
| Calhoun | 23 | 12 | 52.2 |
| Charleston | 141 | 61 | 43.3 |
| Chesterfield | 4 | 1 | 25.0 |
| Clarendon | 270 | 193 | 71.5 |
| Darlington | 122 | 73 | 59.8 |
| Dillon | 60 | 16 | 26.7 |
| Dorchester | 103 | 60 | 58.3 |
| Florence | 162 | 103 | 63.6 |
| Georgetown | 305 | 191 | 62.6 |
| Horry | 429 | 287 | 66.9 |
| Lee | 95 | 47 | 49.5 |
| Marion | 596 | 358 | 60.1 |
| Marlboro | 5 | 2 | 40.0 |
| Orangeburg | 105 | 63 | 60.0 |
| Sumter | 221 | 156 | 70.6 |
| Williamsburg | 800 | 560 | 70.0 |
| Total | 3670 | 2332 | 63.5 |

Source: South Carolina Disaster Recovery Office

Mobile homes constitute the majority of reconstructed housing (53.1%) likely due to the rural nature of the 17 county area, the affordability of housing stock, and the focus on LMI homeowners. Site-built houses make up the remaining reconstructed housing type (46.9%). There are significant differences in housing construction projects, with Horry and Clarendon having more mobile homes in the program (64% and 63% respectively), while Chesterfield has the highest percentage of houses (Figure 10). Of the 2,332 active projects in the 17-county region (including those completed), the majority involved rehabilitation (50.3%), followed by replacement (41.3%), and reconstruction (8.4%).²⁶

²⁶ Data from South Carolina Disaster Recovery Office.

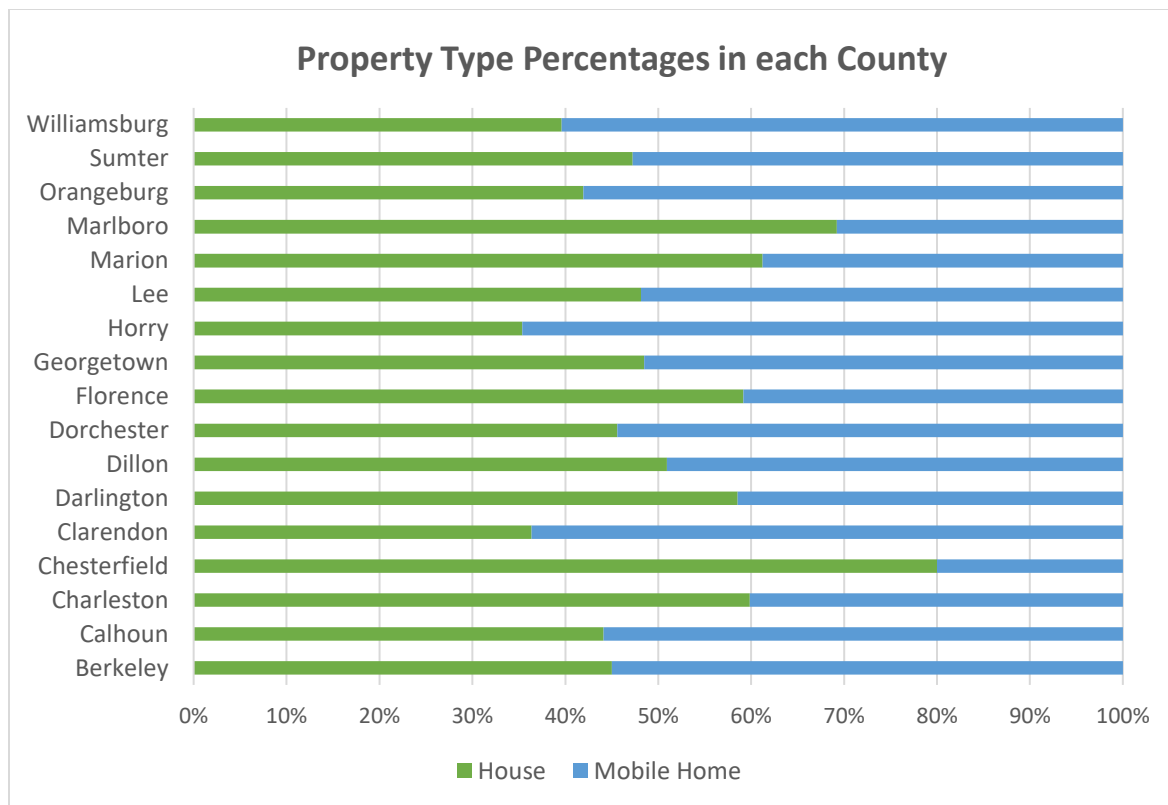


Figure 10 Housing types in the CDBG-DR reconstruction program by county

While county-level data provide useful comparisons, a more detailed picture of the active residential recovery projects shows the unique characteristics of the 17-county region in its affordable housing stock, especially the concentration of mobile homes (Figure 11). It is important to note the concentration of mobile homes in the region. For example, in the region there are approximately 805,000 housing units, of which 154,000 are mobile homes or 19.1% of the housing stock (Table 8). This varies by county from a low of 7% in Charleston County to a high of 40% in Clarendon County. Reducing the flood risk impacts on these properties poses some unique challenges for the state requiring a regional approach for more effective mitigation activities that will enhance the disaster resilience of these communities.

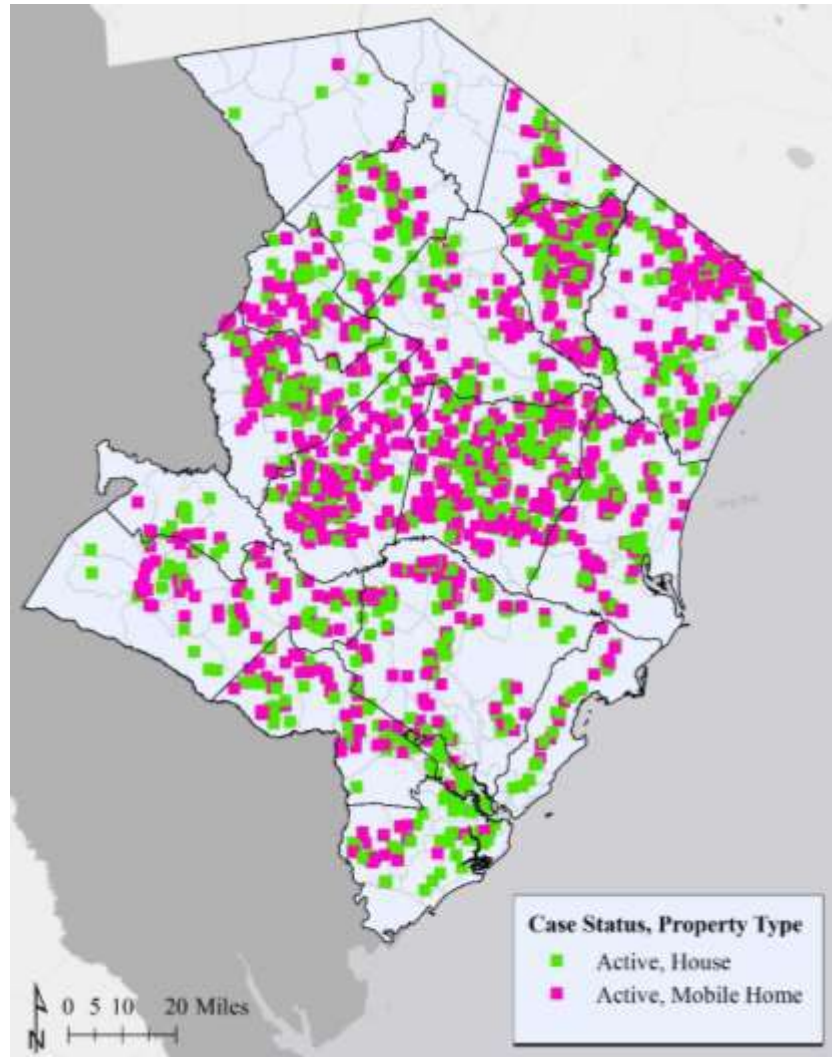


Figure 11 Active rehabilitation, replacement, and reconstruction cases by property type

Table 8 The Nature of County Housing Stock and Type of Post-Disaster Reconstruction

| County | Housing Units (Count) | Mobile Home (Counts) | % Mobile Homes | Dominant Form of Repair |
|--------------|-----------------------|----------------------|----------------|-------------------------|
| Berkeley | 73,303 | 14,730 | 20.1 | Rehabilitate |
| Calhoun | 7,342 | 2,398 | 32.7 | Rehabilitate |
| Charleston | 17,0401 | 12,057 | 7.1 | Rehabilitate |
| Chesterfield | 21,380 | 7,324 | 34.3 | Rehabilitate |
| Clarendon | 17,396 | 7,026 | 40.4 | Replace |
| Darlington | 30,303 | 9,088 | 30.0 | Rehabilitate |
| Dillon | 13,687 | 5,027 | 36.7 | Rehabilitate |
| Dorchester | 54,912 | 7,817 | 14.2 | Rehabilitate |
| Florence | 58,489 | 11,631 | 19.9 | Rehabilitate |

| County | Housing Units (Count) | Mobile Home (Counts) | % Mobile Homes | Dominant Form of Repair |
|--------------|-----------------------|----------------------|----------------|-------------------------|
| Georgetown | 33,681 | 6,085 | 18.1 | Replace/Rehabilitate |
| Horry | 185,438 | 28829 | 15.5 | Replace |
| Lee | 7,786 | 2,681 | 34.4 | Rehabilitate |
| Marion | 14,969 | 4,371 | 29.2 | Rehabilitate |
| Marlboro | 12,039 | 3,287 | 27.3 | Rehabilitate |
| Orangeburg | 42,386 | 13,874 | 32.7 | Rehabilitate |
| Sumter | 46,079 | 11,417 | 24.8 | Rehabilitate |
| Williamsburg | 15,371 | 5,915 | 38.5 | Rehabilitate |

Safe Home Funding

The South Carolina Safe Home Program provides matching and non-matching grant funds to help coastal property owners mitigate the impacts of hurricane and high-wind damage. The program, administered by the SC Department of Insurance, receives an annual allocation from the state legislature under the Omnibus Coastal Property Insurance Reform Act of 2007.²⁷ Grants are based on family size and adjusted gross household income when compared to county and/or state median family income whichever is higher. However, the maximum grant is \$5000. The program supports retrofitting owner-occupied, single family homes with improvements such as upgraded roof covering, repair or replacement of manufactured home piers, anchors, or tie-down straps, or opening protection such as window replacement or hurricane shutters. The application period normally begins on July 1st of a given year with rolling applications and awards until the depletion of all the allocated funds for the year (\$1.1 million in 2019).

The majority of Safe Home grants are in Horry County, followed by Charleston and Berkeley Counties (Table 9, Figure 12). Within the Pee Dee and Santee watersheds, 5,561 grants have been awarded representing 97% of the total number of awards. Within this region, approximately 86% of the grants were for site-built homes, not mobile homes.

Table 9 Safe Home Grants in the 17 counties

| County | Number of Safe Home Funding projects |
|--------------|--------------------------------------|
| Berkeley | 740 |
| Charleston | 758 |
| Dorchester | 345 |
| Florence | 8 |
| Georgetown | 622 |
| Horry | 2774 |
| Marion | 165 |
| Williamsburg | 149 |
| Total | 5561 |

²⁷ See SC Safe Home, <https://www.doi.sc.gov/605/SC-Safe-Home>

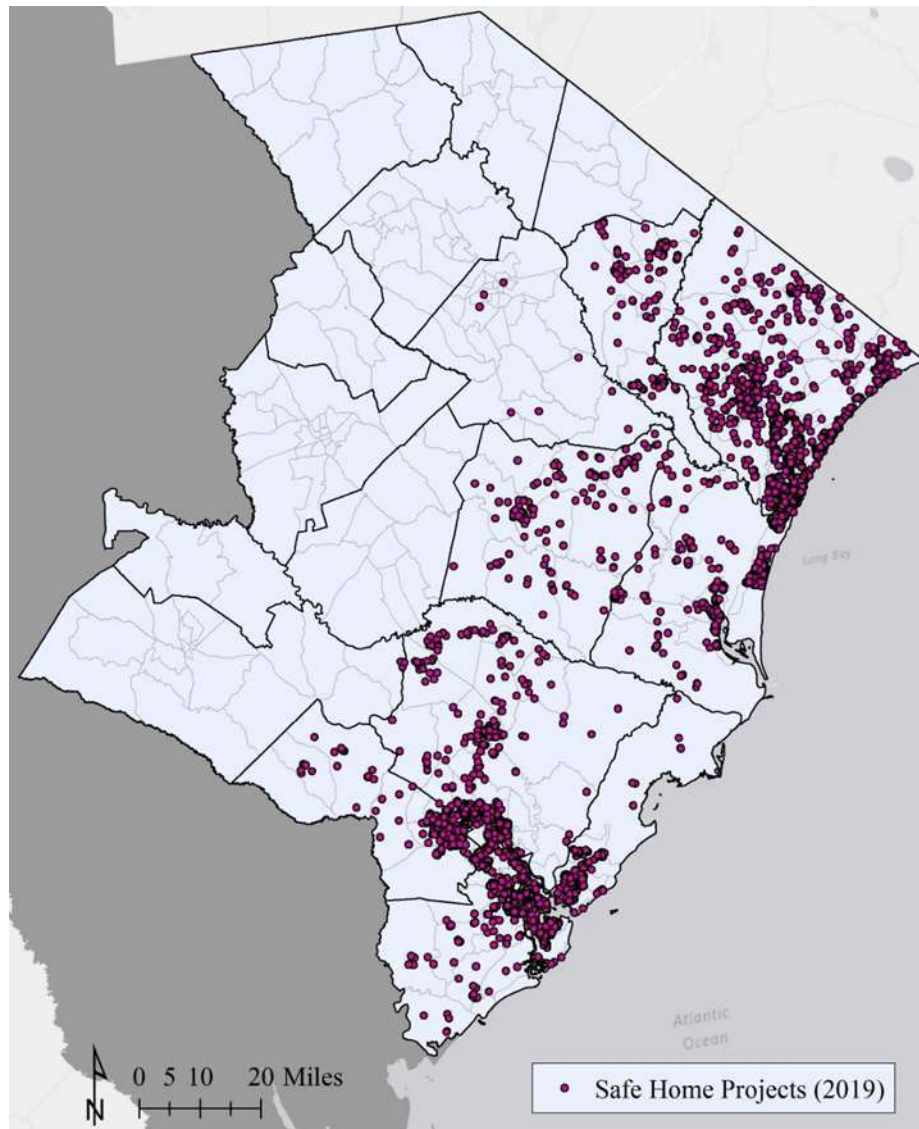


Figure 12 Total Safe Home mitigation projects since the program’s inception through June 2019

The Unmet Household Mitigation Deficit

To determine the unmet household mitigation needs all of the applicants to any of the federal or state recovery and mitigation programs (FEMA IHP, NFIP claims, SBA loans, HUD CDBG-DR, and Safe Home grants) were tallied for the 17 counties as well as the census tracts within them to create a total mitigation safety net score (Table 10). To calculate the unmet mitigation needs or the household mitigation deficit, the total number of successful mitigation and safety applicants was subtracted from the total number of FEMA housing assistance applicants for the combined disaster declarations (DR-4241 and DR-4286). The difference represents those with potential need based on their applications for assistance. This

computation is similar to the one used in the approved HUD CDBG-DR Action Plan for Hurricane Matthew in determining unmet needs.²⁸ As stated in that plan,

“For this event, just as in the Oct. 2015 flooding disaster, an overwhelming majority of ineligible FEMA IA applicants are of low-to-moderate income (36%-Under 30% LMI and 9% more under 50% LMI, **with 20,223 applicants below 50% of the Area Median Family Income (AMFI)...**It **should be noted, that the average distance between ineligible and eligible applicants is only ½ mile for 75% of applicants, ¼ mile for 55%, and less than 1/10 mile for nearly 30% of applicants.** These results indicate that ineligible recipients saw the same impacts as those found eligible and will likely have a slower recovery because they likely experienced very similar impacts as those felt by FEMA eligible folks. For this reason, ineligible applicants must be considered in any overall housing unmet need calculation.”²⁹

Table 10 Determination of Number of Unmet Mitigation Needs Properties

| County | FEMA Total Registrants | # FEMA IHP Approvals | # NFIP Claims | Total # SBA Loans | # SCDRO Properties | # Safe Home Grants | TOTAL (#) Mitigation | Mitigation Deficit (#) |
|--------------|------------------------------|----------------------------|------------------|-------------------------|-----------------------|--------------------------|-------------------------|---------------------------|
| Berkeley | 5171 | 1337 | 150 | 34 | 229 | 740 | 2490 | 2681 |
| Calhoun | 782 | 187 | 0 | 9 | 23 | 0 | 219 | 563 |
| Charleston | 10103 | 2338 | 2349 | 69 | 141 | 758 | 5655 | 4448 |
| Chesterfield | 223 | 44 | 0 | 3 | 4 | 0 | 51 | 172 |
| Clarendon | 3573 | 1069 | 11 | 15 | 270 | 0 | 1365 | 2208 |
| Darlington | 3491 | 893 | 15 | 19 | 122 | 0 | 1049 | 2442 |
| Dillon | 1849 | 576 | 25 | 8 | 60 | 0 | 669 | 1180 |
| Dorchester | 4255 | 1047 | 335 | 24 | 103 | 345 | 1854 | 2401 |
| Florence | 9327 | 2874 | 113 | 28 | 162 | 8 | 3185 | 6142 |
| Georgetown | 5291 | 1645 | 1046 | 12 | 305 | 622 | 3630 | 1661 |
| Horry | 9188 | 2592 | 4910 | 40 | 429 | 2774 | 10745 | -1557 |
| Lee | 1171 | 276 | 5 | 16 | 95 | 0 | 392 | 779 |
| Marion | 3998 | 1407 | 102 | 15 | 596 | 165 | 2285 | 1713 |
| Marlboro | 409 | 90 | 1 | 4 | 5 | 0 | 100 | 309 |
| Orangeburg | 6794 | 1674 | 38 | 33 | 105 | 0 | 1850 | 4944 |
| Sumter | 7936 | 2757 | 123 | 24 | 221 | 0 | 3125 | 4811 |
| Williamsburg | 6258 | 2292 | 40 | 23 | 800 | 149 | 3304 | 2954 |
| Total | 79819 | 23098 | 9263 | 376 | 3670 | 5561 | 41968 | 37851 |

Based on this analysis, 37,851 homeowners registered for assistance with slightly more than half (53%) receiving help to repair and/or mitigate future damage to their homes. The mitigation deficit appears greatest (by number count) in Florence County, followed by Orangeburg and Sumter Counties. The ratio

²⁸ Op. cit., Note 18.

²⁹ Ibid., page 51-52.

of mitigation to total registrants for Horry County shows a higher mitigation count than FEMA registrants because of the localized success of South Carolina's Safe Home wind mitigation program. Initially, it might appear that Horry County has sufficient mitigation funding, but there are regions within the county that are lacking (see below). The counties with the highest percentage of unmet needs, and are thus the most underserved by household mitigation resources are Chesterfield, Marlboro, Orangeburg, Calhoun, and Darlington.

A more detailed picture at the census tract level shows areas with a high concentration of applicants with unmet needs (Figure 13 left). These areas include the inland riverine portion of Horry and Georgetown Counties in the Waccamaw River area, Williamsburg County and southern Sumter County (Black River basin), central Orangeburg County, and areas where Berkeley, Dorchester, and Charleston counties meet. When compared to the Social Vulnerability Index (Figure 13 right), the highest unmet needs (or household mitigation deficits) are co-located in the most vulnerable census tracts in Georgetown and Williamsburg Counties along the Black River and Pee Dee Rivers and in Horry County along the Waccamaw River. This is in addition to smaller tracts in Charleston, Orangeburg, Sumter, and Florence Counties that show higher levels of social vulnerability and unmet mitigation needs.

Flooding and the Household Mitigation Deficit

Those census tracts with the largest household mitigation deficit appear in those inland riverine areas that had significant flood damage during the 2015 Floods and Hurricane Matthew in 2016 (Figure 13 bottom). Reducing the impact of flooding in these MID counties through enhanced household flood mitigation is an important element of this plan, especially in those low-lying areas with repetitive flood losses.

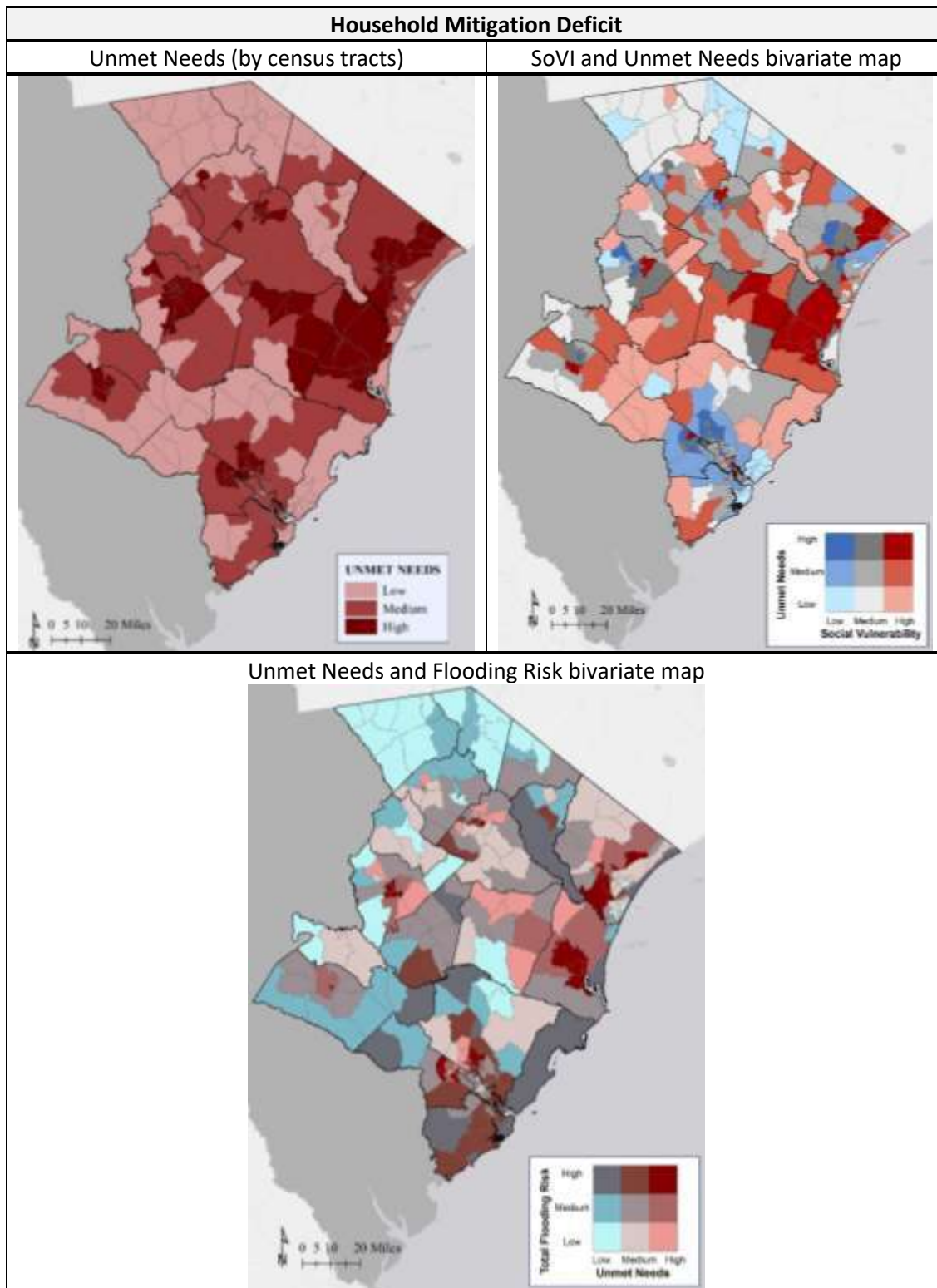


Figure 13 Unmet household recovery and mitigation needs (left) and its relationship to social vulnerability (right). The bivariate map shows census tracts with high social vulnerability, but moderate (orange) to high (red) levels of a mitigation deficit. In contrast, areas with higher mitigation deficits but low social vulnerability are in dark blue. The relationship between the mitigation deficit and flooding is shown on the bottom panel, dark red showing higher flood risk and household mitigation deficits.

Assessment of Critical Community Lifelines

The South Carolina Hazard Mitigation Plan describes seven overall goals in its plan but in implementing hazard mitigation the state considers hazards, risk, vulnerability, and capabilities in establishing priorities.³⁰ Flood buyouts (especially severe repetitive loss properties) and other flood mitigation projects, along with structural measures to permanently protect essential infrastructure (or critical lifelines), assume the highest priority for the state's mitigation resources according to the plan. At present, the funding resources for state and local mitigation actions include the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA), all administered by FEMA.³¹ These are resources awarded to state agencies, local governments, and local communities to further risk reduction, not directly to individual households. The Flood Mitigation Assistance program is specifically designed to reduce or eliminate flood insurance claims under the NFIP program.³² Direct household-level recovery and short-term mitigation resources and deficits were detailed in the previous section.

The potential impacts of hazards on community lifelines and the vital services they provide is an important consideration for communities, before, during, and after a damaging event as the destruction or disruption of such lifelines can hinder longer-term recovery. The following are characteristics of community lifelines:

- 1) provide necessary services and goods to all households and businesses in the community
- 2) disruption in the service can lead to life-threatening situations
- 3) involve complex and interdependent networks within and across sectors
- 4) a disruption in one lifeline can affect and/or disrupt another leading to cascading failures³³

Lifeline Impacts from 2015 and 2016 Events

The most significant impact from the October 2015 flooding event occurred to the transportation system (roads and bridges). Statewide, 541 roads, including portions of Interstate 95 (which transects our region) were closed and/or damaged. In addition, 221 bridges were affected, 25 of which needed replacing. There were issues with public safety as 52 dams failed (out of the 2,370 regulated dams in the state), in addition

³⁰ Op. cit. Note 1, p. 254.

³¹ Federal Insurance and Mitigation Administration, FY 2019 Pre-Disaster Mitigation (PDM) Grant Program, Fact Sheet. Accessed December 3, 2019. <https://www.fema.gov/media-library-data/1566838030892-2ce88be44262b32999aeca3e383aa05/PDMFactSheetFY19Aug2019.pdf>; FEMA, The Hazard Mitigation Grant Program Guide for State/Local Governments, Accessed December 3, 2019. <https://www.fema.gov/hazard-mitigation-grant-program-guide-state/local-governments>.

³² Federal Insurance and Mitigation Administration, FY 2019 Flood Mitigation Assistance (FMA) Grant Program, Fact Sheet. Accessed December 3, 2019. <https://www.fema.gov/media-library-data/1566838228911-f228284e94d43af0d6b16214dcf07f63/FMAFactSheetFY19Aug2019.pdf>

³³ National Association of Counties, 2014. *Improving Lifelines: Protecting Critical Infrastructure for Resilient Counties*. Accessed November 19, 2019. https://www.naco.org/sites/default/files/documents/NACo_ResilientCounties_Lifelines_Nov2014.pdf

to many failures of unregulated dams.³⁴ These failures not only affected homes and businesses downstream, but also damaged roads and bridges, forcing closures for months afterward.

The flooding also affected utilities, wastewater treatment, and drinking water supply, collection, and treatment facilities. An estimated 16 water systems required boil-water advisories for 400,000 residents in the flooded region. The agricultural sector suffered extensive impacts from the 2015 floods with floods destroying the fall harvest, and saturated fields and unbalanced pH levels in the soil restricting planting in the spring, totaling an estimated \$76 million in losses.³⁵

Hurricane Matthew, with its coastal storm surge, high winds, and inland flooding hit a year later. The resulting swollen rivers in 2016 flooded many of the same communities as the previous year. Rainfall amounts ranged from 10-15 inches.³⁶ Just as in the prior year, many of the agricultural areas were flooded again, this time causing an estimated \$29 million in losses.³⁷

Assessing Lifeline Impacts: Index Construction

Lifelines include specific types of infrastructure that provide and facilitate the delivery of services (such as power) and are indicators of resilience assets and capacities. Monitoring community lifelines becomes an important element in enhancing community resilience to future hazards or high-impact events. Rather than describe in qualitative terms the potential effect of flooding on lifelines in our region, the Hazards and Vulnerability Research Institute (HVRI) at the University of South Carolina developed a quantitative index of the potential hazard impacts to lifelines specifically for the CDBG-MIT plan. The spatial representation of the index shows where mitigation efforts to reduce hazard impacts are most needed.

The Potential Community Lifeline Impact Index (PCLII) uses components from FEMA's Community Lifelines Implementation Toolkit³⁸ as the basis for its input data. Data on each of the seven components and subcomponents (Table 11) were collected from publicly available sources and used as proxies to represent selected aspects of the subcomponents. For example, the number of fire stations represents fire services, while the number of pharmacies is the proxy for medical supply chain. An assumption was that the data were the "best available" and therefore no quality control and/or quality assurance of the public data was done by HVRI. FEMA's Community Lifelines Toolkit focuses on response, so not all of the sub-components were amenable or appropriate for inclusion into the PCLII for assessing mitigation need.

The proxy variables had different measurement units (raw number, miles, acreages), so in order to compare them, the data were standardized using a statistical scaling procedure called min-max. This procedure transforms the original value of the variable into a ranked ordering ranging from zero (the lowest value) to one (the highest value) for that variable for all of counties or census tracts. The re-ranking of the variables was done for all the input variables identified in Table 11. Within each of the seven

³⁴ Op. cit., Note 15.

³⁵ Ibid.; Cutter, S.L., 2017. "The perilous nature of food supplies: natural hazards, social vulnerability, and disaster resilience, *Environment: Science and Policy for Sustainable Development* 59(1), p. 4-15.
<http://dx.doi.org/10.1080/00139157.2017.1252603>

³⁶ Op. cit., Note 18.

³⁷ Ibid.

³⁸ FEMA, 2019. *Community Lifelines Implementation Toolkit V 2.0*. Accessed November 19, 2019.
[https://www.fema.gov/media-library-data/1573854342974-a94cb00eb44b245d61d88fdf66e74bd6/Final_Tlkt2.0_RspnsTlkt20191114\(508\)v1845.pdf](https://www.fema.gov/media-library-data/1573854342974-a94cb00eb44b245d61d88fdf66e74bd6/Final_Tlkt2.0_RspnsTlkt20191114(508)v1845.pdf)

components, the input variables were averaged to produce a single value for the main component. The component averages were then summed to create the PCLII for each county (or census tract), which theoretically ranges from 0-7. Each of the seven components were then mapped based on the underlying data into five classes using natural breaks³⁹ to illustrate the variability between counties. Counties with higher scores indicate more potential for lifeline impact, and those with lower scores, less potential lifeline impact. The overall impact scores were mapped into 3-categories using the standard deviation method in order to develop a bi-variate association with SoVI following the preceding displays in the hazards analysis.

Table 11 Variables included in the computation of the Potential Community Lifeline Impact Index (PCLII)

| Lifeline | Component | Variable | Source |
|------------------------|--------------------------|--|-------------------------------|
| Safety & Security | Law Enforcement/Security | # Local law enforcement locations | HIFLD ¹ |
| | | # Correctional facilities | HIFLD ¹ |
| | | Evacuation routes (listed in transportation) | |
| | Fire Services | # Fire stations | HIFLD ¹ |
| | Search & Rescue | EMS stations (reclassified under health) | |
| | Government Services | # Child care centers | HIFLD ¹ |
| | | # College and universities | HIFLD ¹ |
| | | # Public schools | HIFLD ¹ |
| | Community Safety | # Local EOC | HIFLD ¹ |
| | | # State regulated dams | SCDHEC ² |
| Food, Water, & Shelter | Food | # Supermarkets, neighborhood markets, grocery stores | ESRI ³ |
| | | # Restaurants | ESRI ³ |
| | | # Food/banks/pantries | Foodpantries.org ⁴ |
| | Water | # Wastewater systems/private septic systems | USEPA ⁵ |
| | | # Public and private water supply systems | SCDHEC ⁶ |
| | Shelter | # Designated emergency shelters | HIFLD ¹ |
| | | # Hotels | ESRI ³ |
| Health & Medical | Medical Care | Acreage in current production | USDA ⁷ |
| | | # Hospitals (acute medical care) | HIFLD ¹ |
| | | # Nursing homes (chronic care/long term care centers) | HIFLD ¹ |
| | Public Health | # Urgent care facilities | HIFLD ¹ |
| | | Not applicable | |
| | | # EMS stations and/or ambulances | HIFLD ¹ |
| | Medical Supply Chain | # Pharmacies | ESRI ³ |
| | Fatality Management | # Mortuaries and post-mortuary facilities (crematoriums) | ESRI ³ |
| | | # Cemeteries | ESRI ³ |
| Energy | Power Grid | # Non-nuclear power plants (power generation) | HIFLD ¹ |
| | | Power lines/transformers (power distribution), miles | HIFLD ¹ |
| | | Land area in 10-mile Emergency Planning Zone (EPZ) from nuclear power plant (square miles) | HVRI ⁸ |
| | | # Electric power substations | HIFLD ¹ |
| | Fuel | # Commercial fuel stations | ESRI ³ |
| | | Natural gas/fuel pipelines, miles | HIFLD ¹ |
| Communications | Infrastructure | # Cell phone towers | HIFLD ¹ |
| | | # Broadcast towers | HIFLD ¹ |

³⁹ The categorization into five classes used the Jenks natural breaks method. This method preserves the natural groupings in the data where big differences appear between each group. Given that such groups may differ from one variable to another, the values in each of the groupings are not comparable from one map to another.

| | | | |
|---------------------|--|---|-------------------------|
| | | # AM transmission towers | HIFLD ¹ |
| | | # FM transmission towers | HIFLD ¹ |
| | Responder Communications | EOCs (listed in public safety) | |
| | Alerts, Warnings, Messages | Sirens | Google ⁹ |
| | Finance | # FDIC banks | HIFLD ¹ |
| | | # NCUA credit unions | HIFLD ¹ |
| | 911 and Dispatch | Not applicable | |
| Transportation | Highway/Roadway/Motor Vehicle | Major road/highway miles | US Census ¹⁰ |
| | | # Bridges | HIFLD ¹ |
| | | # Formal rest areas/truck stops | USDOT ¹¹ |
| | | # Registered motor vehicles | USCensus ¹² |
| | Mass Transit | # Public transit bus depots | SCDOT ¹³ |
| | Railway | # Rail stations (Amtrak) | USDOT ¹⁴ |
| | | # Rail miles | SCGIS ¹⁵ |
| | Aviation | # Airports/aircraft landing facilities | HIFLD ¹ |
| | Maritime | # Ports/port facilities | HIFLD ¹ |
| | | # Coast guard stations | SCDHEC ² |
| Hazardous Materials | Facilities | # Marinas | SCDHEC ² |
| | | # Solid waste landfills | HIFLD ¹ |
| | | # Superfund/NPL sites | USEPA ⁵ |
| | | # Toxic release sites (TRI) | USEPA ⁵ |
| | HAZMAT, Pollutants, Contaminants (Incidents) | # Facilities with risk management plans | RTK ¹⁶ |
| | | Not applicable | |

Sources:

¹ Homeland Infrastructure Foundation-Level Data (HIFLD), <https://hifld-geoplatform.opendata.arcgis.com/>

² SCDHEC, GIS Data Clearinghouse, <https://apps.dhec.sc.gov/GIS/ClearingHouse>

³ ESRI ArcGIS Business Analyst Data

⁴ South Carolina Food Pantries, https://www.foodpantries.org/st/south_carolina

⁵ USEPA, Envirofacts, Federal Registry Service (FRS), <https://www.epa.gov/frs/frs-query>

⁶ SCDHEC, Enhanced Watershed Atlas, <https://gis.dhec.sc.gov/watersheds/>

⁷ USDA, National Agricultural Statistics Service, Cropland Data Layer (CDL), https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php

⁸ Hazards and Vulnerability Research Institute (HVRI), University of South Carolina, computed area in square miles within the 10-mile Emergency Planning Zone around nuclear power plants.

⁹ South Carolina Statewide Siren Map, Google, Available at <https://www.google.com/maps/d/viewer?mid=1TCmTY-semJsIreJyhSTFoTXGXS0&msa=0&ll=33.662210360757086,-80.98949400000004&z=8>. Accessed November 24, 2019.

¹⁰ Derived from US Census TIGER/Line shapefiles

¹¹ US Department of Transportation, Geospatial at the Bureau of Transportation Statistics, Truck Stop Parking, http://osav-usdot.opendata.arcgis.com/datasets/96e35a64968348e89b7840e67fc72e71_0

¹² US Census Bureau, American Community Survey 2013-2017 5-year estimates, Aggregate number of vehicles (car, truck, or van) used in commuting by workers 16 years and over.

¹³ SCDOT, Public Transit Providers, <https://www.scdot.org/travel/travel-transitproviders.aspx>

¹⁴ US Department of Transportation, Geospatial at the Bureau of Transportation Statistics, Amtrak Stations, http://osav-usdot.opendata.arcgis.com/datasets/3e9daf681b154fb19372044f4d52941a_0?geometry=-89.509%2C32.152%2C-71.118%2C34.899

¹⁵ South Carolina Geographic Information Systems (SCGIS), <http://www.gis.sc.gov/data.html>

¹⁶ Right-to-Know Network (RTK), <https://rtk.rjifuture.org/rmp/>

Potential Community Lifeline Impacts

The region includes a mix of very rural counties such as Calhoun (38.3 people/square mile) to more urbanized counties such as Charleston (269.3 people/square mile).⁴⁰ Four of the state's seven metropolitan areas are located in the assessment region: Charleston (787,643), Myrtle Beach (480,891), Florence (204,961), and Sumter (106,512).⁴¹ The coastal metropolitan areas have seen rapid population growth between 2010-2018, with Charleston-North Charleston recording an 18% increase, while the Myrtle Beach-Conway-North Myrtle Beach increased by 28% during the same period. The overall lifeline impact is greatest in Charleston County, the most densely populated and urbanized county in this assessment (Figure 14). Charleston County is followed by Horry, Florence, Orangeburg, and Berkeley counties.

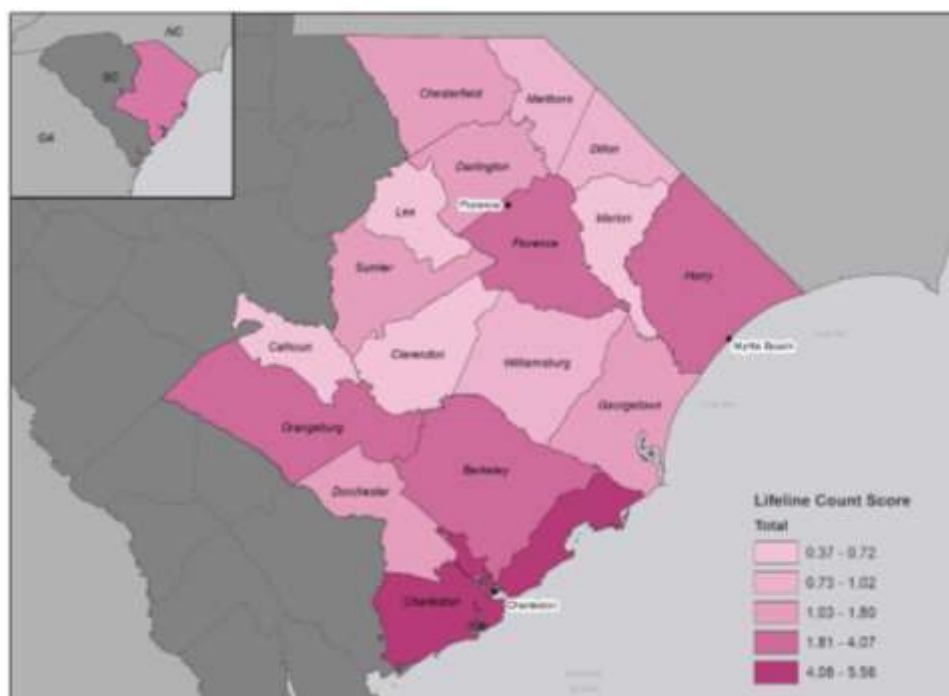


Figure 14 Potential Community Lifeline Impact Index (PCLII).

While each of these counties have combinations of urban and rural attributes, it is the concentration of urban and suburban residents and the lifelines that support them which drives the geographic distribution of lifeline impacts. The primary components driving the lifeline impacts are hazardous materials (Charleston, Berkeley, and Orangeburg), food, water, and shelter (Horry), and health and medical (Florence). For the remaining counties, energy, safety and security, and transportation lifelines were the main components of their total lifeline impact score.

⁴⁰ USA.com, South Carolina Population Density County Rank, <http://www.usa.com/rank/south-carolina-state--population-density--county-rank.htm>

⁴¹ US Census, American FactFinder <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

The following figures illustrate the variability in the potential impacts based on each of the seven components from FEMA. Note that in all cases, Charleston County has the highest scores on all of them with the exception of the energy component.

The communications lifelines (radio transmission lines, cell towers, access to financial resources) reflects a concentration around the most urban centers (Myrtle Beach area in Horry County, and the Charleston metro area in Charleston County, and Florence in Florence County) (Figure 15 top). The same pattern is shown in the food, water, and shelter lifelines, again related to the population size of the county (Figure 15 bottom).

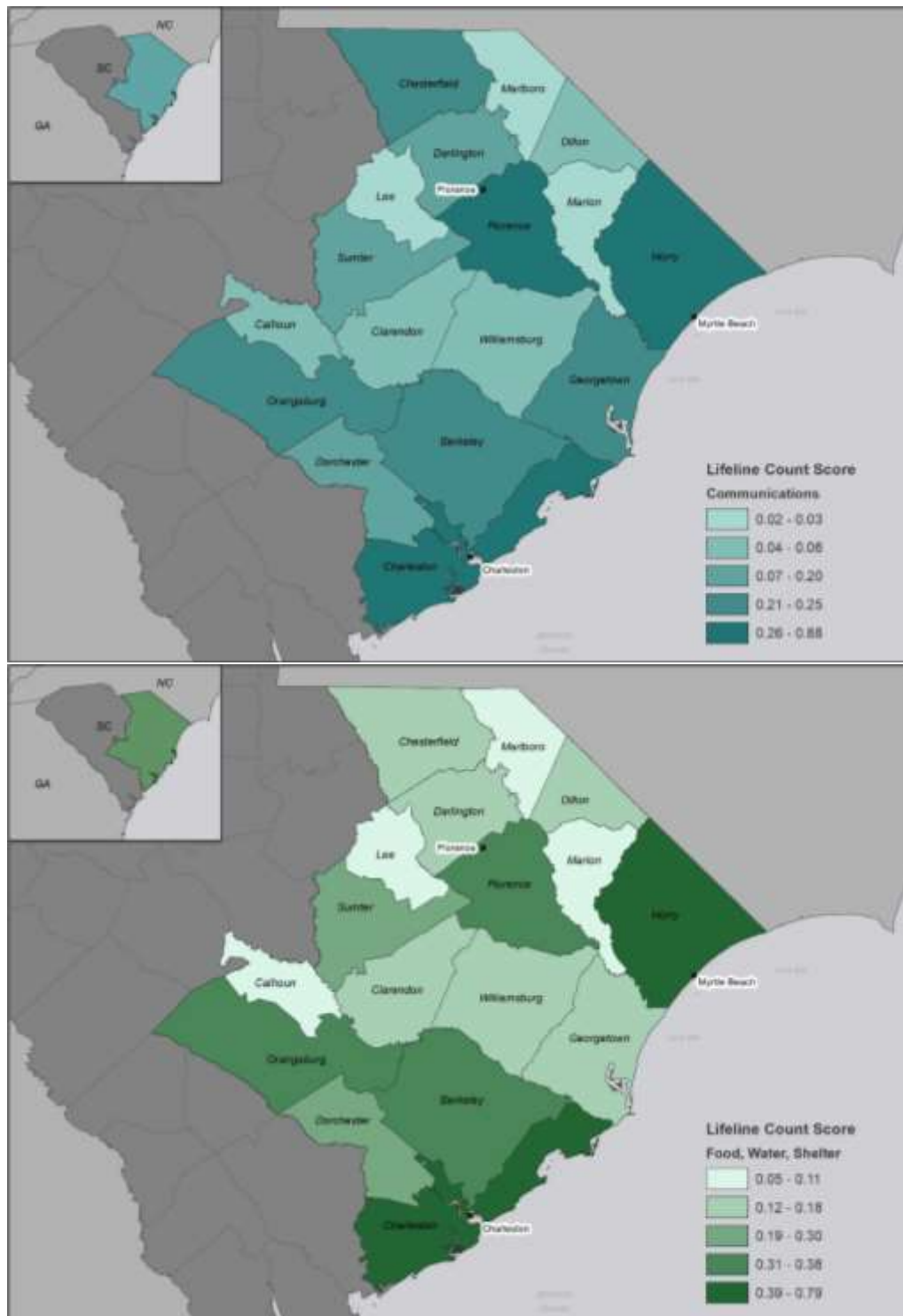


Figure 15 Communications Lifelines (top), and Food, Water, & Shelter Lifelines (Bottom).

The health and medical lifelines reflect medical facilities and pharmacies which are concentrated in Charleston County (Figure 16 top). Similarly, the geographic pattern of safety and security lifelines (e.g. law enforcement locations, fire stations) is also concentrated in Charleston (Figure 16, bottom).

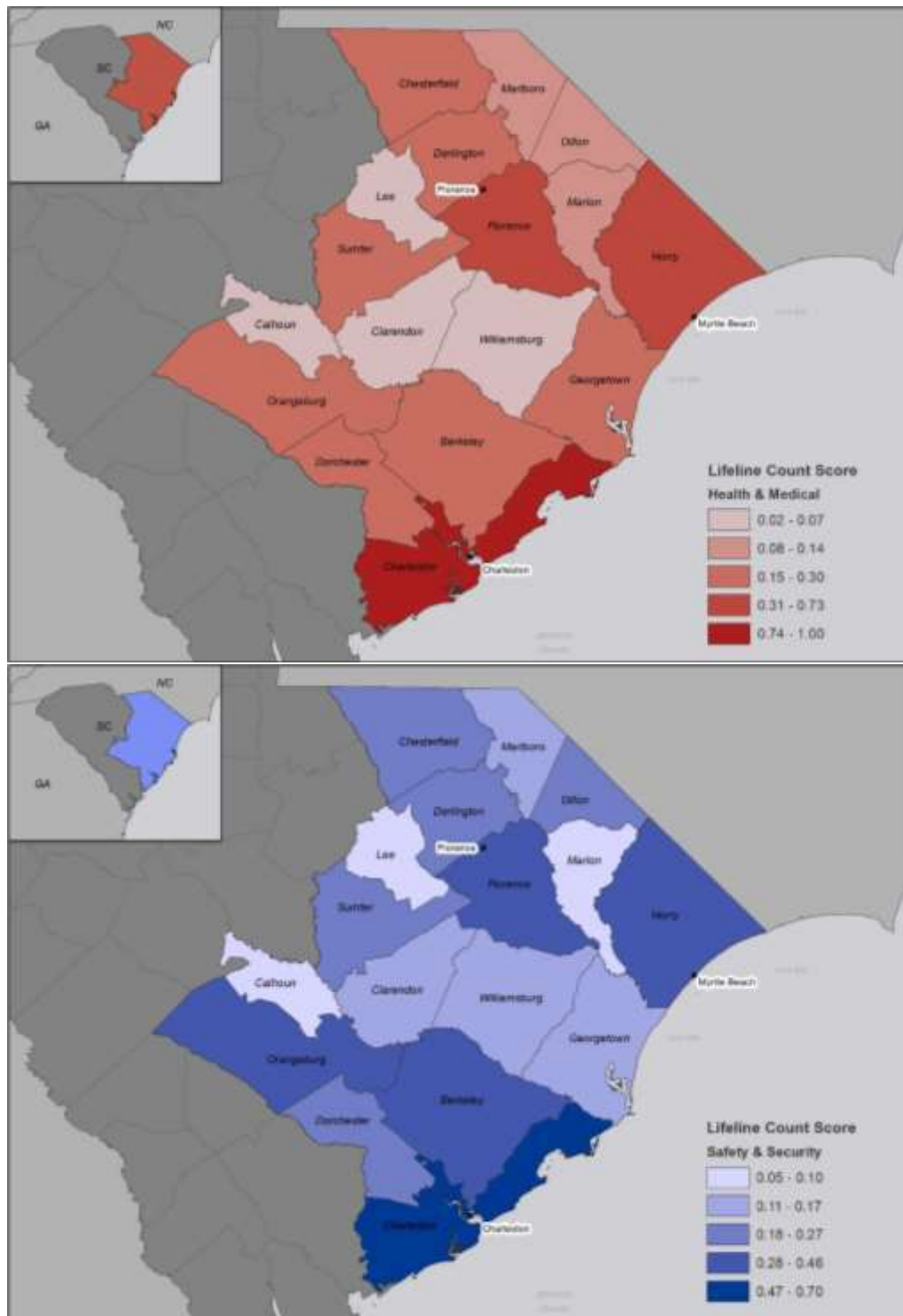


Figure 16 Health & Medical Lifelines (top) and Safety & Security Lifelines (bottom)

Energy lifelines represent a different geographic distribution (Figure 17 top). The energy lifelines power grid represents non-nuclear power plants, high voltage transmission lines, natural gas/fuel pipelines all of which are located outside of densely populated areas. Further, the H. B. Robinson nuclear power

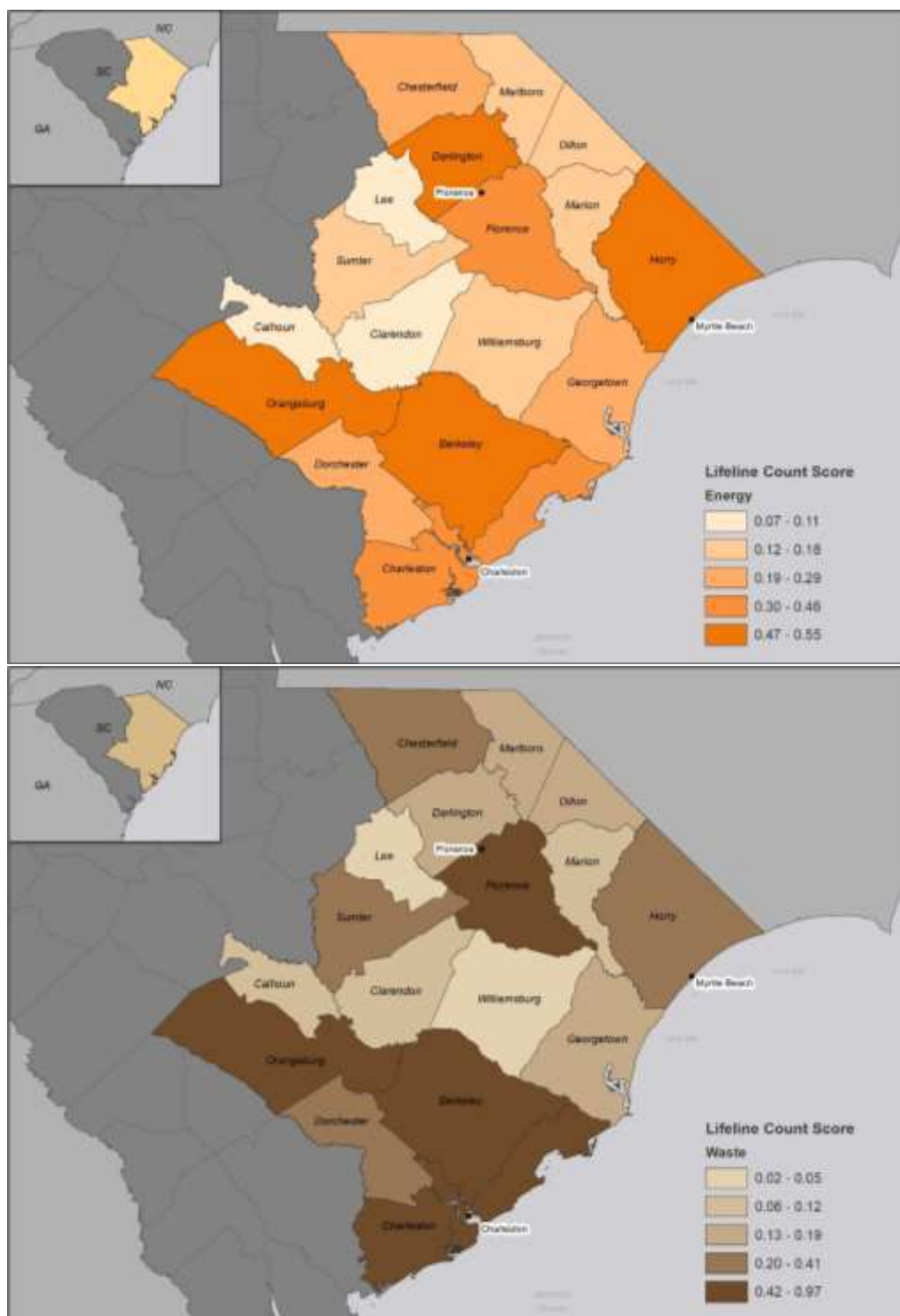


Figure 17 Energy Lifelines (top) and Waste Lifelines (bottom)

station is located in Hartsville, in Darlington County. The 10-mile emergency planning zone (EPZ) for the reactor covers most of Darlington County. The fuel component of the energy lifelines (number of fuel stations) reflects more of an urban or population bias. The waste lifelines are not really lifelines per se, but reflect sources of additional dangers as a consequence of flooding or some other natural event. These

waste facilities include toxic waste, hazardous waste, and solid waste. Any of these are located in older industrial areas in Charleston, Berkeley, Orangeburg, and Florence counties (Figure 17 bottom).

The transportation lifeline includes highway, mass transit, railway, aviation, and maritime elements such as rail and road miles, bridges, landing facilities, and port facilities. There is a concentration of transportation lifelines in Charleston County (Figure 18), as expected, given its centrality as a major port and trans-shipment facility.

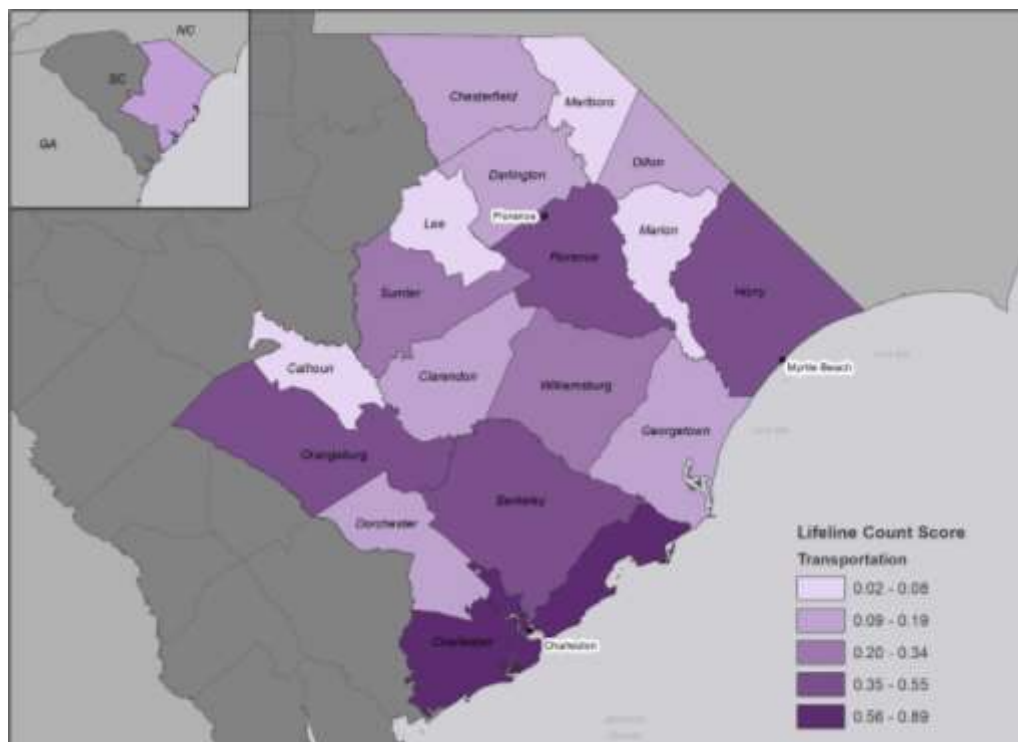


Figure 18 Transportation Lifelines

The PCLII provides a geospatial view of the cumulative density of lifelines in the watersheds and is clearly a function of population density and the need for and location of services. However, it is instructive to examine two additional elements of lifeline impacts. The first is the assessment of within-county variability of the lifelines using a smaller unit of analysis than the county, such as a census tract. The second key feature is how the distribution of potential lifeline impacts correspond to the most socially vulnerable areas within the assessment area. To that end, the PCLII was overlain with SoVI in a bi-variate map to illustrate the relationship between them. As illustrated in Figure 19, there is a positive relationship between social vulnerability and lifeline impacts. In particular, the less populated rural counties may be disproportionately affected. Given their relative level of vulnerability and higher lifeline impact scores, situations where there are outages and interruptions in lifeline services may have more severe

consequences and affect both resilience and recovery simply because there are fewer lifelines covering larger areas, a lack of redundancy, and less institutional capacity as noted in the literature.⁴²

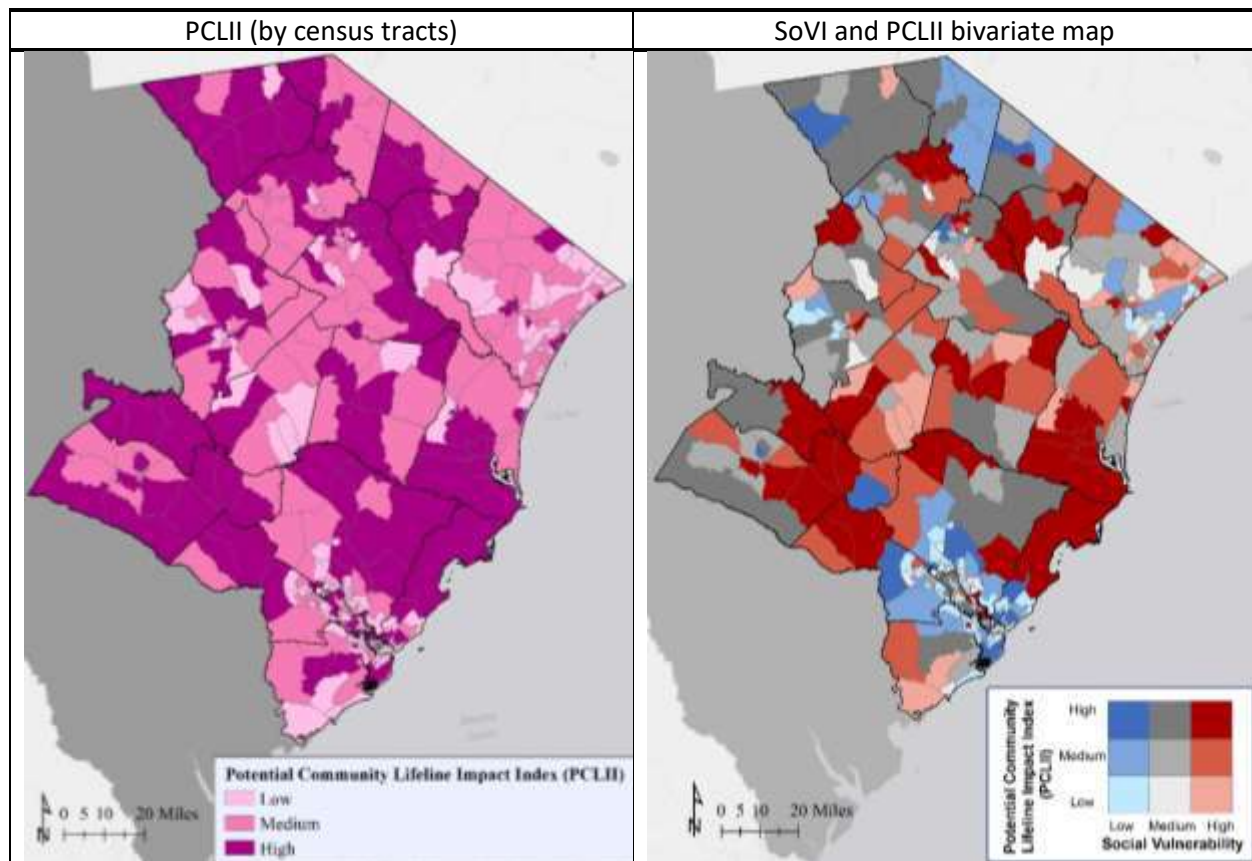


Figure 19 Potential Community Lifeline Impact Index (PCLII) total by census tract (left) and compared with the Social Vulnerability Index (SoVI) right.

Mitigation Needs Assessment Summary

This assessment of mitigation needs used an empirical geospatial approach to define the most vulnerable areas within the assessment area of interest in three broad areas—hazard risk (especially flooding), household mitigation deficits post initial recovery, and potential impacts on lifelines. In each instance these were examined in relation to the social vulnerability of the region. The overall hazards assessment for the region based on the 2018 South Carolina Hazard Mitigation Plan Update served as the foundation. Through a series of maps of individual hazards, a risk profile for the 17-counties showed the relative level

⁴² Cutter, S.L., C.G. Burton, and C.T. Emrich, 2010. "Disaster resilience indicators for benchmarking baseline conditions," *J. Homeland Security and Emergency Management* 7(1): Article 51, doi: <https://doi.org/10.2202/1547-7355.1732>, Cutter, S.L., K.D. Ash, and C.T. Emrich, 2016. "Urban-rural differences in disaster resilience," *Annals of the American Association of Geographers* 106(6), p. 1236-1252, doi: <http://dx.doi.org/10.1080/24694452.2016.1194740>.

of hazardousness in the region. These hazard maps facilitate comparing the relative social vulnerability of census tracts (using bi-variate mapping) to illustrate who is most affected by different hazards and where. Given the recent disaster experiences with tropical storms and flooding, and the significance of the flood hazard in this region, this CDBG-MIT plan focuses on the flood hazard including riverine, coastal, and flash flooding.

Examination of the recovery profiles for households showed unmet household mitigation needs (or mitigation deficits) especially among the most socially vulnerable populations. Such deficits are most pronounced in the MID counties, especially Georgetown, Horry, and Williamsburg Counties.

The potential lifeline impacts based on the Potential Community Lifeline Impact Index (PCLII), showed an overall concentration of potential lifeline impacts in the less populated census tracts in the assessment area. In addition, higher levels of potential lifeline impact appear in census tracts with higher levels of social vulnerability, as in Orangeburg County, along the coast in rural Charleston County to Georgetown County, inland in Williamsburg County, and in Marion County. All of these areas contain census tracts of higher social vulnerability and higher potential lifeline impacts.

To highlight the significance of the flood hazard in the 17-county region and to solidify the mitigation needs for households and community lifelines/infrastructure to reduce the flood risk and enhance resilience, three additional maps illustrate the regional nature of the flood hazard and its overall impact on South Carolina. For this assessment region, many of the most socially vulnerable census tracts are adjacent to FEMA-designated 100-year and 500-year flood zones (Figure 20). Given the lack of systematic mapping of the entire flood inundation areas for the 17 counties for either the 2015 floods or 2016's Hurricane Matthew at the regional scale, the choice of the flood zone maps seemed prudent. There is a clear pattern of higher levels of social vulnerability near the flood-prone areas, with the exceptions of large sections of Berkeley and Dorchester Counties that have similar flood risk levels, but less socially vulnerable populations.

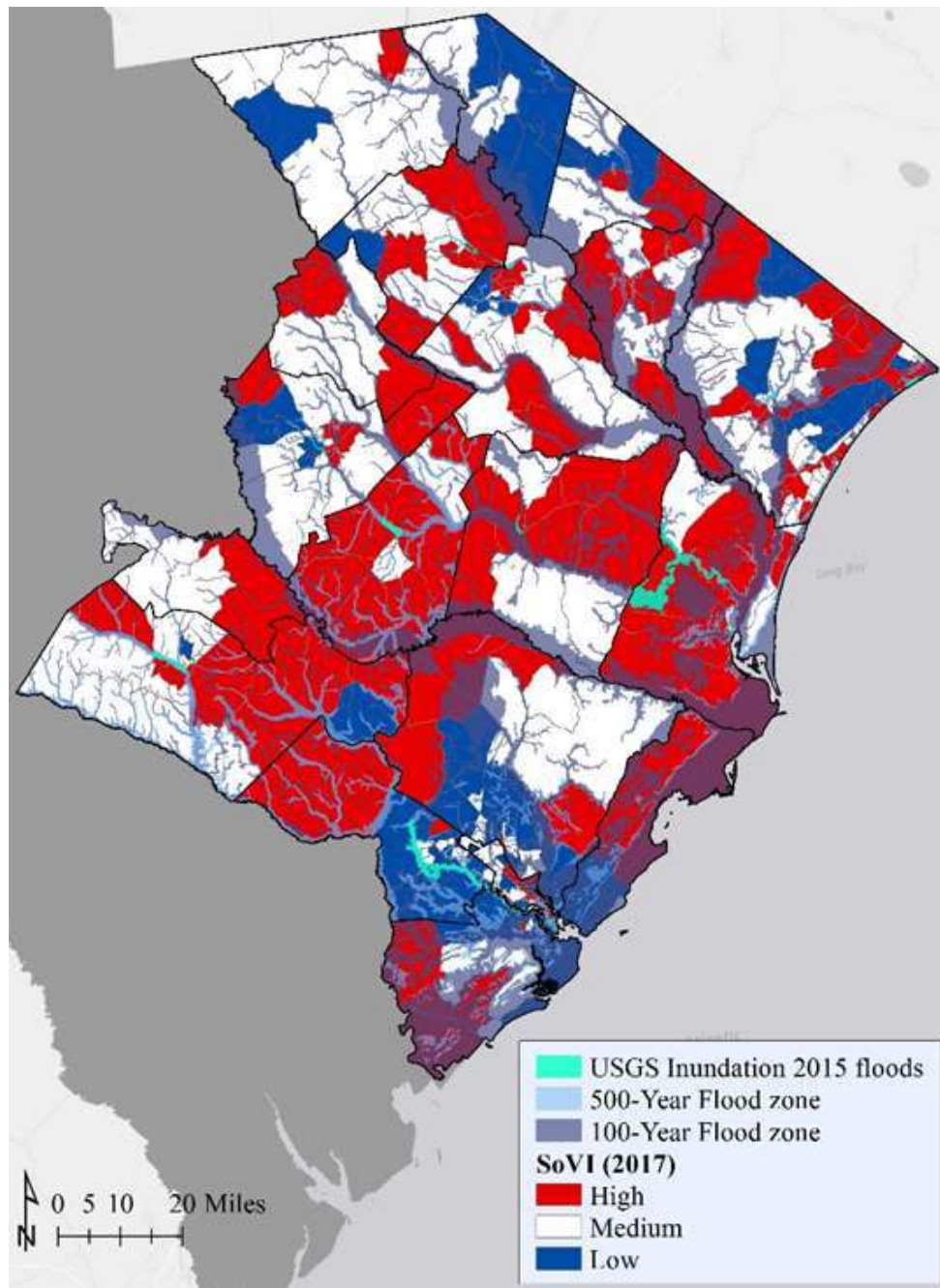


Figure 20 Flood zones in relation to socially vulnerable populations

At the household level, the deficit in mitigation needs shows a slightly different geographic pattern where Marion County (which experienced major damages from both events) has had most of the individual household/property needs met based on the recovery data presented here (Figure 21). However, other areas such as homeowners in census tracts in Horry County, along the Waccamaw River, and those in some of the rural inland counties continue to show household mitigation deficits, which have slowed full recovery in those areas, and potentially reduced their resilience to the next flood event.

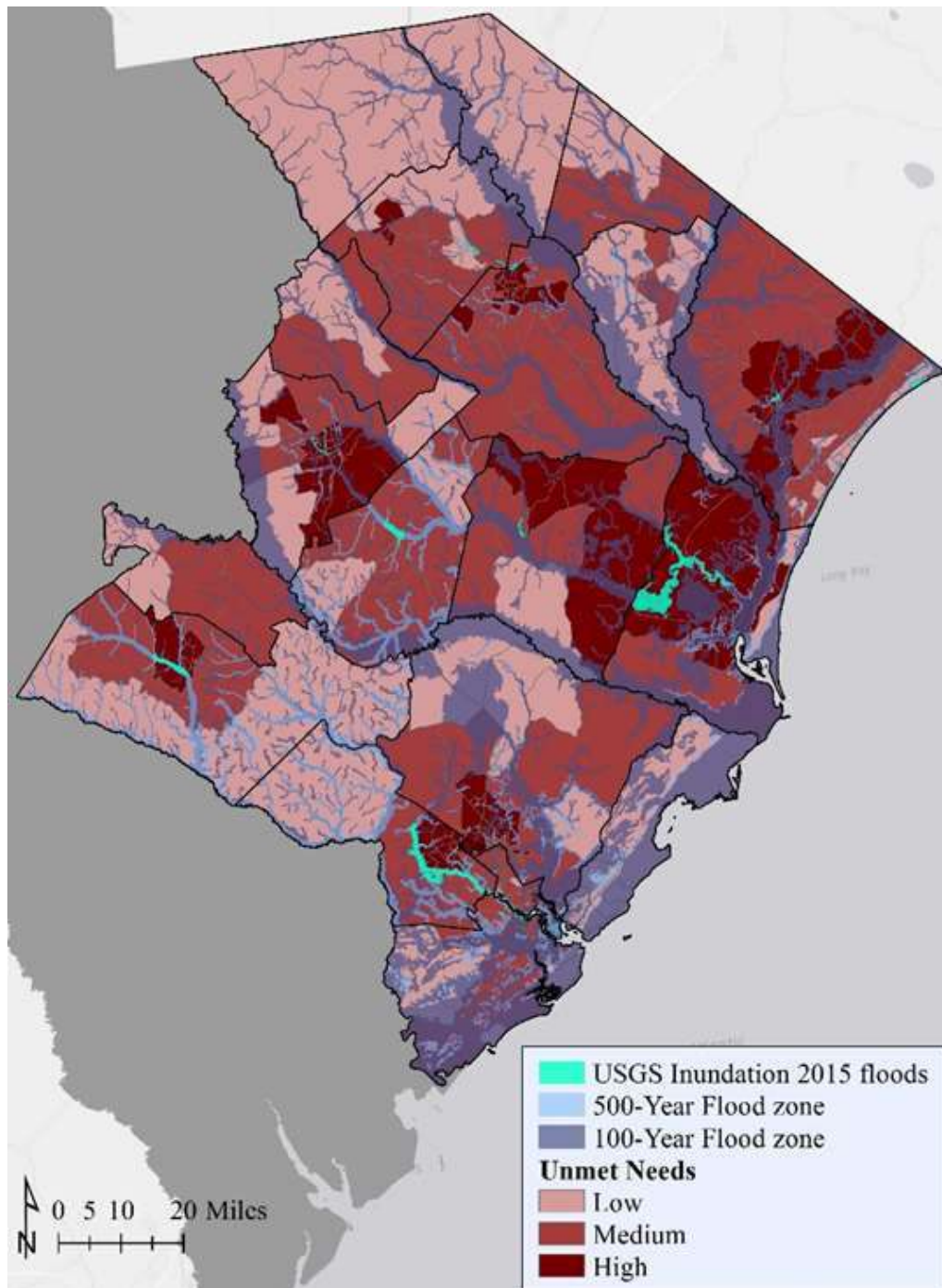


Figure 21 Homeowner unmet recovery and mitigation needs and flood zones

The generalized pattern for community lifelines shows a similar concentration (Figure 22) especially when the inundation from the 2015 floods is examined closely for tracts in Georgetown and Dorchester Counties. Coastal flood zones are visible in Charleston and Georgetown Counties, but higher levels of potential lifeline impacts are visible in Florence, Marion, Dillon, and Darlington Counties in the northern part of the assessment area, and in Orangeburg County, in the southwestern corner of the assessment area.

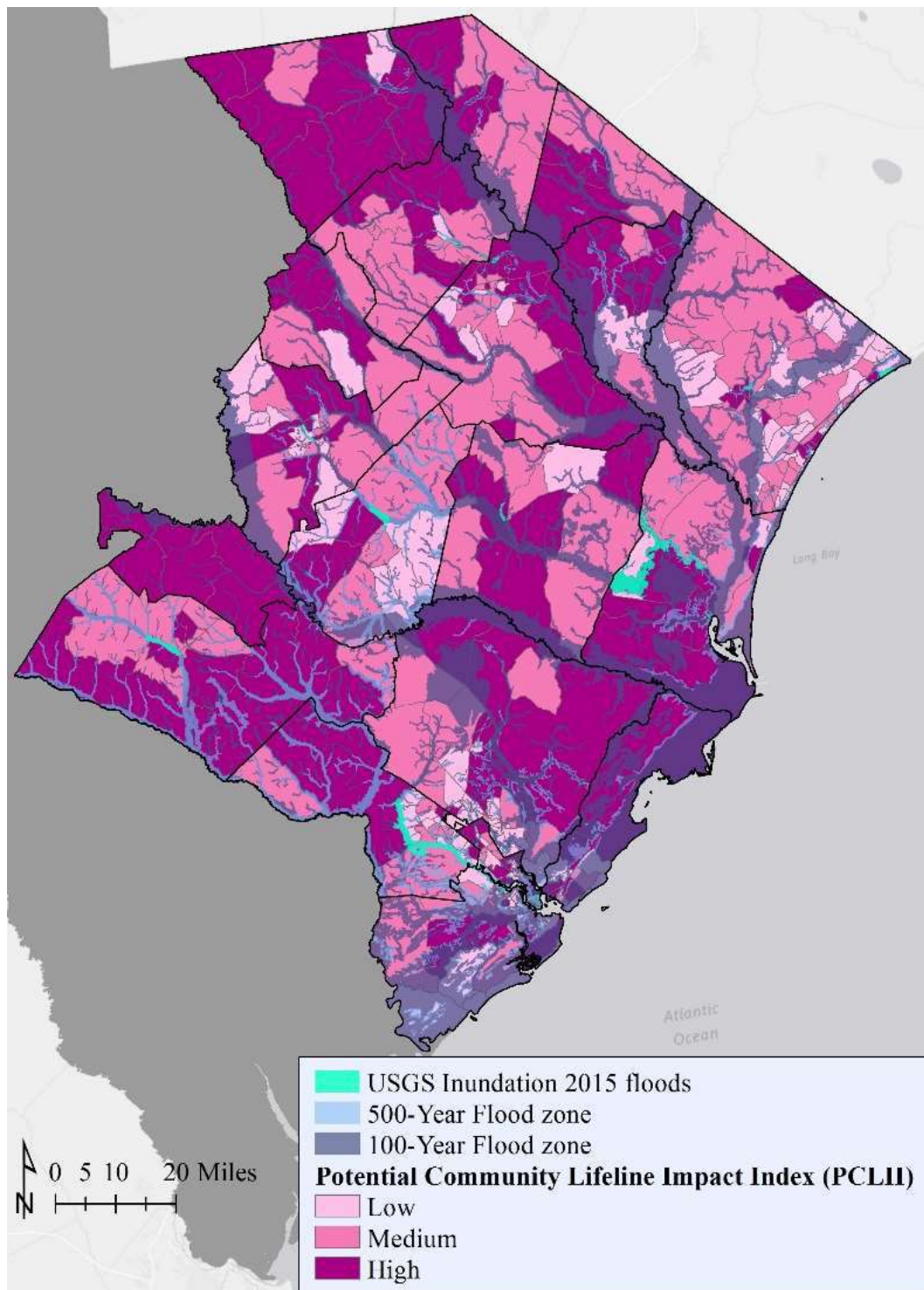


Figure 22 Potential Community Lifeline Impact Index (PCLII) and flood zones

It is no surprise that there is an extensive flood issue within the state, given the topography of the coastal Pee Dee and Santee watersheds. Meandering rivers make their way to the Atlantic Ocean in a region with little vertical relief, creating wetlands and bogs outside of the main channels. Bays and estuaries dot the state's coastal landscape. Tropical storm rainfall extends well beyond South Carolina's borders. The Pee

Dee watershed extends into North Carolina, and significant rainfall amounts in the upper drainage basin produce riverine flooding downstream as the rivers make their way to the coast, long after the tropical storm has passed through the region. Not only do the Pee Dee and Santee watersheds have a significant flood risk, but they also contain HUD-identified most impacted and distressed (MID) counties, and state-identified MID counties. The Pee Dee region (Marion, Dillon Marlboro, Darlington, Lee, Florence, and Williamsburg) contains some of the most socially and economically disadvantaged counties in the state. Not only do they have a higher flood risk, but they are the least able to afford flood mitigation. This addresses the core need for the HUD CDBG-MIT funding—to support the most vulnerable and most in need communities with additional resources to mitigate against future impacts of flooding households and the lifelines that support them.

ACTION PLAN

Funding Priorities

Based on the findings of the mitigation needs assessment, the SCDRO will focus CDBG-MIT funding on reducing potential flood impacts in the Pee Dee and Santee watersheds. This will be accomplished through four broad categories of activities: flood-reduction infrastructure projects, housing buyouts, providing the local match funds for FEMA-funded mitigation programs, and planning activities to assist units of general local government (UGLGs) with updating hazard mitigation plans and developing flood-reduction studies for their communities. SCDRO flood reduction efforts will only address riverine and surface flooding, not storm surge or sea-level rise issues.

Counties Eligible for Assistance

The South Carolina Disaster Recovery Office (SCDRO) will provide assistance to eligible applicants in the following counties only:

| HUD MID | SC MID |
|--------------|--------------|
| Charleston | Berkeley |
| Clarendon | Calhoun |
| Dorchester | Chesterfield |
| Florence | Darlington |
| Georgetown | Dillon |
| Horry | Lee |
| Marion | Marlboro |
| Sumter | Orangeburg |
| Williamsburg | |

No less than \$50,978,000 will be expended in the HUD-identified Most Impacted and Distressed (HUD MID) counties.

Method of Distribution

CDBG-MIT Program National Objectives

South Carolina has designed this CDBG-MIT program in compliance with the national objectives and will ensure that assistance is prioritized toward the most disadvantaged populations. South Carolina will spend a minimum of 50% of program funds on activities that benefit the Low-and-Moderate Income (LMI) population. LMI status is determined by evaluating income as a percentage of the Area Median Income (AMI) in the county in which the applicant lives.

As stewards of federal CDBG funds, the State of South Carolina complies with the Department of Housing and Urban Development's (HUD) mission to develop viable communities by the provision of decent housing, a suitable living environment and expanding economic opportunities, principally for LMI persons. To this end, all funded activities administered by the State of South Carolina will meet one of two named HUD national objectives:

- 1) Benefitting LMI Persons;
- 2) Meeting Urgent Mitigation Needs.

CDBG-MIT programs will begin after the executed grant agreement and be completed by May 2032.

All activities (except planning and program administration) funded through the CDBG-MIT grant must meet the following definition of a mitigation activity: activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future disasters.

Program Budget

The following is a table of budgeted activities:

| Program | Allocation |
|------------------------------|----------------------|
| Infrastructure | \$100,000,000 |
| Housing | \$35,000,000 |
| FEMA-Funded Mitigation Match | \$5,000,000 |
| Planning | \$9,710,500 |
| Program Administration | \$7,879,500 |
| TOTAL | \$157,590,000 |

Note: SCDRO does not anticipate conducting any public service activities with the CDBG-MIT funding.

Leveraging of Funds

The State has worked with HUD, FEMA, SBA, other federal agencies and State-funded agencies to identify and catalog available sources of assistance for recovery from recent disasters. The State will ensure that CDBG-MIT funds are only used to address funding needs not satisfied by other funding sources, many of which are already providing disaster relief and mitigation funding, including, but not limited to:

- FEMA Individual Assistance grants
- FEMA Hazard Mitigation Grant Program
- SBA Disaster Loans
- National Flood Insurance Program payments
- Private insurance
- Natural Resources Conservation Service Emergency Watershed programs
- Water Conservation District funds
- Drinking Water and Water Pollution Control funds, and
- Private foundations

In accordance with the Robert T. Stafford Act, as amended, the State will implement policies and procedures to ensure no individual receives duplication of benefit for the same purpose and/or effect. Federal law prohibits any person, business concern, or other entity from receiving Federal funds for any part of such loss for which the person has received financial assistance under any other program, from private insurance, charitable assistance or any other source.

Infrastructure Program

SCDRO will complete infrastructure projects that will mitigate future flood damage in the Pee Dee and Santee watersheds.

Eligible Applicants: Units of General Local Government (UGLGs), State agencies

Eligible National Objectives: LMI Area Benefit, Mitigation Urgent Need

Eligible Activities: Infrastructure projects that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future flood disasters

Executing Jurisdiction(s): SCDRO and/or UGLG subrecipients with capacity to execute

Total Budget: \$100 million

The Infrastructure Program will be executed in three phases. Phase 1 is designed for projects that are close to shovel-ready. \$50 million will be available in Phase 1. SCDRO will solicit applications for projects from eligible applicants in the Pee Dee and Santee watersheds. Each project will be prioritized based on the methodology detailed in the “Project Prioritization” section. Phase 1 is anticipated to last until year 3 of the Mitigation Program. The CDBG-DR Steering Committee will select projects based on the rankings from the prioritization with additional consideration to ensuring that funding is applied in an equitable manner on a geographic basis.

During Phase 1, SCDRO will use planning funds to assist jurisdictions without “shovel-ready” projects in the development of flood-reduction studies with the intent of identifying appropriate projects for execution during Phase 2. Phase 2 will commence at the start of year 3. \$40 million and any remaining unobligated funding from Phase 1 will be made available in Phase 2. SCDRO will solicit applications for projects for Phase 2. Projects will be ranked using the same prioritization methodology as Phase 1.

Phase 3 will commence no later than the start of year 5. All remaining unobligated funds will be made available to fund projects submitted for Phase 3. SCDRO will utilize the same application and prioritization methodology as the earlier phases for Phase 3.

Operating and Maintenance Plans

SCDRO will require the identification of a responsible entity as a condition of consideration for infrastructure funding during the application phase. The responsible entity will be required to identify its plan for funding operating and maintenance costs (if applicable) for any infrastructure project within its jurisdiction funded through the CDBG-MIT infrastructure program.

Cost Verification

SCDRO will utilize licensed engineers to verify costs and determine cost reasonableness on a project-by-project basis, ensuring that construction costs are reasonable and consistent with market costs at the time and place of construction.

Project Prioritization

SCDRO commissioned a flood-reduction study in the Pee Dee and Santee watersheds, with the final product being a methodology for prioritizing feasible projects, and hydrological modeling to quantify the effectiveness of proposed projects. The feasibility prioritization is based on a 100-point scale with a higher point total indicating a more feasible project.

| <i>Prioritization Category</i> | <i>Maximum Points</i> |
|---------------------------------------|------------------------------|
| LMI % Served | 20 |
| Level of Flood Risk Reduction | 10 |
| Quantity of Flood Risk Reduction | 10 |
| Benefit-Cost Ratio | 20 |
| Leveraged Funding | 10 |
| Permitting/Scheduling | 10 |
| Mobility Improvement | 5 |
| Phasing Considerations | 5 |
| Project Synergies | 5 |
| Environmental Impact | 5 |

Low-to-Moderate Income (LMI) % Served

The first major criterion of this study was to determine the benefit towards the LMI population. LMI is important to establish because a maximum of 50% of mitigation funds can go towards non-LMI communities; however, there is no limit to the maximum of funds towards LMI communities. The final

split of funding towards LMI and non-LMI projects is up to the discretion of the CDBG-DR Steering Committee. In summary, LMI projects are more favorable. For this reason, LMI can be regarded as the most important category to be judged on.

The LMI data used in this study was developed by the U.S. Department of Housing and Urban Development (HUD) covering 2011 to 2015. This time period was chosen as it was the most recently published data available.

An area will be drawn for each project to represent both the service area as well as the extent of the mitigation impact. This area, called “service area”, will be overlaid with the LMI data to calculate a weighted average LMI percentage. This calculated percentage is multiplied by 20 points to produce the final LMI points awarded. An example calculation is shown below:

Service Area LMI = 65% X 20 points = 13 LMI Points

Defining Service Areas

While the LMI formula is straightforward, the more difficult task is defining the service area.

Service projects, such as a hospital, have a boundary drawn around the urbanized communities immediate surrounding the hospital. However, it can be argued that the hospital serves a larger extent such as people from rural parts or even people from neighboring cities or states. The line will be drawn at rural areas because LMI should be based on people and income and not land. Rural areas have an unfair weight that skews LMI percentage due to land size. Other cities or any extent further also was not reasonable as the LMI percentage would be skewed as few people from further away cities attend the hospital.

Infrastructure, such as a storm water network in a neighborhood, will be drawn primarily based on the infrastructure’s watershed boundary. A watershed is defined by topology, or in other words, how the ground slopes to drain water. Any area where rain runs off into the storm water network is included as part of the watershed area. At times, the watershed boundary will be shortened, as many watersheds can elongate hundreds of miles downstream or upstream. In other cases, a watershed boundary may be extended as storm drain networks often connect multiple watersheds conveying runoff through pipes underground which cannot be obtained from the topology. The judgement to define appropriate service areas will be performed based on the best available data, modeling, and by engineers with experience in hydrologic and hydraulic studies.

Using a service area is not only required by grant fund requirements but also an industry standard. As stated by HUD, the LMI data does contain a Margin of Error (HUD, NOTICE: CPD-19-02) and is not a perfect representation of LMI due to privacy rights and several other factors. Caution and consideration will be shown towards communities that can otherwise demonstrate a more representative LMI.

The LMI for numerous areas has significantly changed over time. To validate this claim, LMI data from 2006-2010 and data from 2011-2015 data were compared at several potential project locations. It was not unusual for extremely high LMI areas to switch to extremely low LMI areas or vice versa. It is important

to note that the LMI data changing over time may not always correlate to communities' expectations and assumptions.

Flood Risk Reduction

Another major criterion was the issue of flood risk reduction. This will be two-fold counting the improved level of service of flood protection together with quantity of structures benefited by/protected from flooding by proposed improvements. The points will be divided into these two subcategories with each worth a maximum of 10 points. How points are awarded is summarized in Table 1 and Table 2 below.

The first step is to identify if the cause of flooding is only local rainfall, only riverine, or both. Riverine flooding can only occur in stream water features defined by USGS. Methods such as particle tracing, illuminates a better understanding of the conveyance of water and cause of flooding.

The second step is to quantify the improvement from existing conditions to the proposed mitigation. This will be initially estimated for all projects using the existing model and later corrected upon results from models of existing and proposed conditions during the BCA phase. If the project description does not state the level of protection, the following will be assumed: minor storm water improvements such as a storm drain have a 25-year storm event protection, and major infrastructure such as culverts, bridges, railroads, water treatment plants have protection greater than the 25-year storm event.

| <i>Level of Protection Category</i> | <i>Points</i> |
|---|----------------------|
| Minimal increase | 0 |
| Local or Riverine 25-year, 24-hour storm event level of protection | 4 |
| Local and Riverine 25-year, 24-hour storm event level of protection | 7 |
| Above a 25-year, 24-hour storm event level of protection | 10 |

Table 1: Level of Flood Risk Reduction Points

The 25-year, 24-hour event is the industry standard for stormwater infrastructure projects. Projects' protection performance can vary as storms occur at different durations, intensities, and prior conditions. The BCA phase will consider some of the variations for larger storm events; however, accounting for all variations is not always foreseeable.

The third step is to quantify the amount of structures benefiting from flood risk reduction as shown in **Table 2**. A structure is defined as benefitting from flood risk reduction if the flood levels were reduced by at least a foot of depth. A foot of depth was chosen because it is assumed that no damage would occur before six inches to account for the slab foundation, and an additional six inches would cause significant damage. Other flood risk measures such as extent, duration, and velocity are related to depth, and therefore the process can be streamlined to depth. This difference in depth is measured from the BCA models using the proposed mitigation model minus the existing condition model.

| <i>Quantity of Protection Category</i> | <i>Points</i> |
|--|---------------|
| 0-10 Structures | 0 |
| 10-25 Structures | 4 |
| 25-50 Structures | 7 |
| 50+ Structures | 10 |

Table 2: Quantity of Flood Risk Reduction Points

Structures will be counted individually regardless of size and function. For example, a school and a single-family home would each be counted as one structure.

Benefit-Cost Ratio

A max of 20 points will be assigned based on the quartile ranking of the projects after the close of the application period for each phase. There are four major steps to be able to award points: Modeling Baseline Condition, Cost Estimate, Modeling Mitigation Condition, and the Benefit-Cost Ratio.

Modeling Baseline Condition

SCDRO conducted Hydrologic and Hydraulic (H&H) modeling for the Pee Dee watershed to establish baseline conditions from Hurricane Matthew in October 2016 and the severe storm event in October 2015 for the Santee watershed. These models not only were necessary to compare mitigation, but also assisted in various aspects such as discovering potential projects, formulating assumptions, and awarding points in other categories. All models are calibrated to USGS gages, photos, and any other documented evidence to match the stage, or water surface elevation of the historical flooding.

To summarize the modeling efforts, data was gathered and processed for precipitation, oceanic tides, dam releases, land use, soil type, and digital elevation maps. The hydrology methodology used is NRCS TR-55. The hydrology produces parameters used as inputs into a software program, HEC-HMS version 4.2, which produces a parameter to input into a software program, HEC-RAS version 5.0.6, used to 2D model. In addition, many more technical parameters to input into the model and methods were added to the model. It should be also noted that the model is 15 sub-models refined for accuracy and computing power. After the model was stabilized and running, calibration of the model was accomplished by adjusting several parameters to mimic the historic events.

Cost Estimate

Anticipated construction costs will be applied consistently to all projects, without regard for geographic location, ease or difficulty of construction, or other factors that will usually affect actual construction costs. Only major costs will be estimated as to eliminate the potential hundreds of various minor costs. The cost estimates will be conservative including a 25% contingency to account for minor costs and

uncertainty. This standard pricing provides a streamlined approach for developing the ballpark cost estimates needed for evaluation.

Modeling Mitigation Condition

SCDRO will conduct H&H mitigation modeling for each of the projects to determine the potential cost benefits of the proposed mitigation project. A second model shows the condition after a proposed project is implemented. This second model is compared to the baseline model to determine the benefit of the project. The modeling will have increased resolution and accuracy by limiting the model domain to each project's service area. This will be done for both the baseline and mitigation models of the projects. Many projects' service areas may overlap or be dependent on one another. In this circumstance one model will account for multiple projects having a shared benefit and therefore combined cost estimate.

After modeling, results will be extracted and processed into a benefit. The benefits will be measured using the Flood Module or the Damage Frequency Assessment Module from the FEMA Benefit-Cost Analysis (BCA) methodology utilizing a USACE DDF to convert flood depth to dollars of damage. The following should be noted:

- 1.) Only one storm event was modeled. The other storm events needed for the analysis were generated from the FEMA A05 PELV curve.
- 2.) Each project typically impacts hundreds of structures. Without the information on each individual structure, assumptions will be made such as to value, slab height, and size.
- 3.) Most projects will be measured on the benefit of no prior protection being increased to a 25-year storm event protection. Highway culverts will be expanded to a 50% increase in capacity. Repetitive-Loss Structures projects will take into account the FEMA Flood Insurance Program's (NFIP) last three (3) most recent claims to perform an unknown frequency calculation.
- 4.) Models are independent of each other and do not measure the impact of one project on another or the effect downstream. Without knowing which projects come to fruition, it would not be fair to assume the impact of other projects to merit a project's benefit.
- 5.) It is also assumed that the mitigation is always fully functioning and the impact downstream is not an issue.

Benefit-Cost Ratio

The final step is to simplify all these analyses from the first 3 steps and award points. This will be done by first calculating the benefit-cost ratio as the benefit divided by the estimated cost. This ratio is an expression of the money saved by implementing a project as opposed to the costs occurred by not implementing the project. A ratio less than one means the project will cost more to implement than it will save. Any ratio equal to 1 or higher justifies the project from a pure financial viewpoint.

Next, the ratios will be sorted by quartile to award points as shown in Table 3. This will be done to weaken the cost-benefit ratio defined by a single value to account for the larger picture of the project, account for error from assumptions and methodologies, and be appropriate for the stage of most projects.

| <i>Benefit-Cost Ratio Quartile</i> | <i>Points</i> |
|---|----------------------|
| 0-25% | 0 |
| 25-50% | 7 |
| 50-75% | 13 |
| 75-100% | 20 |

Table 3: Benefit-Cost Ratio Points

Leveraged Funding

Cost share opportunities such as funding from FEMA, Federal Highway Administration (FHWA), South Carolina Department of Transportation (SCDOT), HUD, etc. are a beneficial factor to the desirability of a project. How points are awarded is summarized in Table 4 below.

| <i>Leverage Funding Category</i> | <i>Points</i> |
|---|----------------------|
| No potential cost share identified | 0 |
| Limited potential cost share identified | 5 |
| Significant potential or specific cost share identified | 10 |

Table 4: Leverage Funding Points

From the table above, 0, 5, or 10 points will be assigned based on the project's identified level of potential cost share opportunities. If the project description mentions a specified source and a quantifiable amount of funding, it will be classified as either limited or significant potential. To qualify for significant potential, the funding must cover at least half the estimated cost or be a HMGP project (which has a 75% leverage funding potential). All other projects will be classified as having no potential cost share identified.

It should be noted that leveraged funding will be accounted for in this category and not in the benefit-cost ratio analysis to prevent a double-counting scenario.

Permitting Requirements / Schedule

The acquisition of necessary permits and overall schedule issues affect the efficiency and compliance of a project. Challenges to permitting and schedule will influence the desirability of a project. How points are awarded is summarized in Table 5 below.

| <i>Permitting / Schedule Category</i> | <i>Points</i> |
|--|----------------------|
| Significant challenges | 0 |
| Potential challenges | 5 |
| Little-to-no challenges | 10 |

Table 5: Permitting / Schedule Points

From the table above, 0, 5, or 10 points were assigned based on the project's identified level of possible permitting/schedule challenges. The level of challenges depended on the following characteristics from the description of the project: amount and type of approvals required and pushback from various groups, capability of the municipality, location of the project, scope of the project, status of the project, timeline schedule and planning. Most projects will be assumed to have potential challenges unless proven otherwise.

Mobility Improvement

During every day weather conditions or disasters (such as storm event flooding), it is important to have safe and efficient mobility/transportation corridors and stations for first responders, other emergency personnel, and the general public. Projects which have an attribute of improving this mobility will factor in positively. How points are awarded is summarized in Table 6 below.

| <i>Mobility Improvement Category</i> | <i>Points</i> |
|---|----------------------|
| Minimal mobility improvements | 0 |
| Limited mobility improvements | 3 |
| Significant mobility improvements | 5 |

Table 6: Mobility Improvement Points

From the table above, 0, 3, or 5 points will be assigned based on how a project improves mobility towards the public and first responders. A definitive line can be drawn by categorizing roads as major or minor per SCDOT. Generally, a major road is an airport, evacuation route, highway, or railroad, and even a main route used by multiple neighborhoods. Since major roads are assumed to be used by first responders and a significant portion of the public, they receive 5 points. Minor roads will be awarded 3 points as it is assumed that a limited portion of the public and first responders would use them (neighborhood road, rural road, or low-use road). If the flooding does not occur or improve on a road, zero points will be awarded.

Phasing Considerations

Projects supporting phased approach to implementation of larger projects to support effectiveness or future regional projects beyond current funding will be given up to a max of 5 points. This is outlined in Table 7.

| <i>Phasing Consideration Category</i> | <i>Points</i> |
|--|----------------------|
| No connection to larger scale project | 0 |
| Limited Contribution | 3 |
| Significant Contribution | 5 |

Table 7: Phasing Consideration Points

To qualify for 5 points, a significant contribution is defined as a project with identified phases and a multi-county or multi-city area scope. To qualify for 3 points, a limited contribution would be projects that could be phased itself or with other projects but within the same city area. Otherwise, projects would have no connection and receive zero points.

Project Synergies

Project synergy is defined as two or more projects that interact or cooperate with one another to reduce cost and to produce a combined effect that is greater than the sum of its separate parts. Projects with companion projects that were completed simultaneously to reduce cost and were more effective were awarded up to a max of 5 points. This is outlined in Table 8.

| <i>Synergy Category</i> | <i>Points</i> |
|--------------------------------|----------------------|
| No relations to other projects | 0 |
| Limited cost savings | 3 |
| Significant cost savings | 5 |

Table 8: Synergy Points

To qualify for 5 points and be considered a significant cost savings project, the project has to be either 1.) closely related or identical to 3 or more projects, or 2.) located directly next to 3 or more similar projects. To qualify for 3 points, the project must be similar to another project within the same county. Otherwise, no relations will be inferred, and 0 points will be awarded.

Environmental Impact / Benefit

A project's impact on the environment was given up to a max of 5 points. This is outlined in Table 9.

| <i>Environmental Impact Category</i> | <i>Points</i> |
|---|---------------|
| Negative Impact | 0 |
| Neutral Impact | 3 |
| Green Infrastructure or Improved Impact | 5 |

Table 9: Environmental Impact Points

Projects will be assumed to have a neutral impact. A project would receive the maximum points if it specifically mentions a quantifiable environmental improvement, green infrastructure, includes a pond/reservoir, or restores an urbanized area to a natural state. On the contrary if the urban footprint increased or alters the environmental by more than 20% then the project would have a negative impact. At times, projects would have both positive and negative impacts which were assumed to be neutral when combined.

Covered Projects

SCDRO will not fund any projects which meet the definition of a covered project as specified in the Federal Register Notice.

Housing Buyout Program

SCDRO and/or UGLG subrecipients will conduct voluntary buyouts strategically as a means of acquiring contiguous parcels of land for uses compatible with open space, recreational, natural floodplain functions, wetlands management practices, or ecosystem restoration. The acquired property will be subject to a permanent covenant on its continued use to preserve the floodplain. The term “buyout” refers to the acquisition of properties with the intent to reduce risk from future flooding. SCDRO will utilize pre-disaster fair market valuation (FMV) to determine property value, unless the property owner did not own the property prior to the disaster event. If property ownership changed after the disaster, SCDRO will use the current FMV. Any CDBG–MIT funds in excess of the FMV are considered assistance to the seller, thus making the seller a beneficiary of CDBG–MIT assistance. If the seller receives assistance as part of the purchase price, this may have implications for duplication of benefits calculations or for demonstrating national objective criteria.

SCDRO will solicit applications from Units of General Local Government (UGLGs) located in the seventeen counties eligible for assistance. The application phase will assist in determining an UGLG's willingness and capability to execute the buyout program as a subrecipient. At a minimum, the UGLG must identify the responsible entity that will take ownership of the parcels once the buyout activity is complete. Buyout applications will be screened using a modified prioritization process like the infrastructure program, with the focus being LMI population served, quantifiable flood reduction, and benefit-cost analysis. The CDBG–DR Steering Committee will have the final authority for the approval of UGLG applications for buyouts.

Eligible Applicants: Units of General Local Government located in SC MID or HUD MID counties

Eligible National Objectives: LMI Direct Benefit, LM-Buyout, LM-Housing Incentive, LMI Area Benefit, Mitigation Urgent Need

Eligible Activities: Buyouts

Executing Jurisdiction(s): SCDRO and/or UGLG subrecipients

Total Budget: \$35 million

Buyout Program Eligibility Criteria

All beneficiaries will be held to the following criteria as condition of eligibility:

- Property must be a residential parcel located within the 17 counties identified as the SC MID or HUD MID;
- One person with an ownership interest in part or in whole on the property must be able to demonstrate U.S. Citizenship or Lawful Permanent Residence; and
- Property must be in the Special Flood Hazard Area or floodway as identified on the Flood Insurance Rate Map (FIRM), or pre-FIRM, or in a Disaster Risk Reduction Area as defined by the SCDRO in the buyout program policies and procedures manual.

Basis for Calculating Housing Assistance Awards

If eligible and awarded, housing assistance award calculations are based on the following factors:

1. Pre-disaster housing unit value (unless property changed ownership after the disaster);
2. Any applicable housing incentives;
3. A review of funding from all sources to ensure no Duplication of Benefits (DOB); and
4. DOB funds, if any, for use in the project.

Housing assistance awards will be determined after factoring in the inputs listed above, subtracting any unaccounted-for DOB, and then factoring in the pre-determined program assistance maximums that apply to the housing assistance activities to be used. Funds qualified as DOB may be required to be placed in escrow while assistance is provided.

If a determination is made during the process that the Assistance Awardee has a duplication of benefits, and the duplicative funds are still on hand, the Assistance Awardee will be required to sign an escrow agreement with the SCDRO. This agreement will require the Assistance Awardee to transfer all duplication of benefits funds to the SCDRO. The SCDRO will hold those funds until the construction is complete. Once construction is satisfactorily completed, the SCDRO will roll the funds back into the program, if DOB funds exceed demolition and site stabilization costs.

The award maximum for a beneficiary of the buyout program is \$250,000 (inclusive of any incentives).

All construction work will be performed by contractors licensed by the State of South Carolina. All work must be completed to standards that meet applicable building codes.

In cases of severe demonstrable hardship, the State may consider funding difficult or unexpected projects above and beyond the maximum awards. The State will use a Special Case Panel with members appointed by the SCDRO Program Management Director to evaluate and authorize projects that exceed the stated assistance limits.

Awards may include expenses for additional related costs such as ADA modifications or emergency repair of water or sewer connections. The State will address the access and functional needs of individual citizens in all phases of the process. Consideration will be made for citizens with communication limitations, disabilities, are elderly, or have chronic medical disorders.

The State of South Carolina will allow any household to appeal its property valuation and provide rationale for why the valuation should be changed, should that household have reason to believe the valuation is incorrectly calculated because of historical inequity and/or other grounds.

Housing Construction Standards

South Carolina will implement construction methods that emphasize quality, durability, energy efficiency, sustainability, and mold resistance. All new construction will be designed to incorporate principles of sustainability, including water and energy efficiency, resilience, and mitigation against the impact of future disasters. **As of the publication of this plan, South Carolina does not anticipate any housing construction activities except for demolition of existing structures and subsequent site stabilization. In**

the event that changes or a special case requires construction activity, the following standards will apply.

In South Carolina, all counties and some localities require permits. All counties and the localities with such requirements have standing offices to process the required permits. There are currently no known local capacity issues which would prevent the needed permits from being processed and issued.

For all new construction, the State will require construction to meet one of the following industry recognized standards:

- ENERGY STAR (Certified Homes);
- Enterprise Green Communities;
- LEED;
- ICC-700 National Green Building Standard;
- EPA Indoor AirPlus (ENERGY STAR a prerequisite); or
- any other equivalent comprehensive green building program acceptable to HUD.

South Carolina will monitor construction activities to ensure the safety of residents and the quality of homes assisted through the program.

Flood Insurance & Elevation

South Carolina will follow HUD guidance to ensure all structures, defined at 44 CFR 59.1, designed principally for residential use and located in the 1 percent annual (or 100-year) floodplain that receive assistance for new construction, repair of substantial damage, or substantial improvement, as defined at 24 CFR 55.2(b)(10), must be elevated with the lowest floor, including the basement, at least two feet above the 1 percent annual floodplain elevation. Residential structures with no dwelling units and no residents below two feet above the 1 percent annual floodplain, must be elevated or flood-proofed, in accordance with FEMA flood-proofing standards at 44 CFR 60.3(c)(3)(ii) or successor standard, up to at least two feet above the 1 percent annual floodplain.

Property owners assisted through the mitigation program will be required to acquire and maintain flood insurance if their properties remain in a FEMA-designated Special Flood Hazard Area. This requirement is mandated to protect safety of residents and their property and the investment of federal dollars. The elevation height of a house can significantly reduce the cost of flood insurance. South Carolina will implement procedures and mechanisms to ensure that assisted property owners comply with all flood insurance requirements, including the purchase and notification requirements described below, prior to providing assistance.

South Carolina will ensure adherence to Section 582 regarding the responsibility to inform property owners receiving disaster assistance that triggers the flood insurance purchase requirement that they have a statutory responsibility to notify any transferee of the requirement to obtain and maintain flood insurance, and that the transferring owner may be liable if he or she fails to do so.

As a rule, the State will not aid with flood insurance costs. In cases of hardship, the State may provide limited, temporary assistance for the provision of flood insurance in order to properly secure the federal investment in the property.

Anti-displacement

The State plans to minimize displacement of persons or entities and assist persons or entities displaced as a result of implementing a project with CDBG-MIT funds. This is not intended to limit the ability of the State to conduct buyouts or acquisitions of residential property in a floodplain or Disaster Risk Reduction Area.

The State will ensure that the assistance and protections afforded to persons or entities under the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA), and Section 104(d) of the Housing and Community Development Act of 1974 are available. The URA provides that a displaced person is eligible to receive a rental assistance payment that covers a period of 42 months. The State accepts the HUD waiver of the Section 104(d) requirements which assures uniform and equitable treatment by setting the URA and its implementing regulations as the sole standard for relocation assistance.

The SCDRO Legal Department has the responsibility of ensuring compliance with the URA.

FEMA-Funded Mitigation Match

The State will designate \$5 million dollars to match FEMA-funded mitigation grant programs to include the Hazard Mitigation Grant Program, Pre-Disaster Mitigation Grant Program (and subsequent Building Resilient Infrastructure and Communities Program), and Flood Mitigation Assistance Program. Any match funding activities must meet CDBG-MIT and FEMA eligibility requirements. Activities may include but are not limited to: buyouts, structural elevation, localized flood risk reduction, infrastructure retrofit, and post-disaster code enforcement. Applicants are required to submit applications to the South Carolina Emergency Management Division for the HMGP and PDM programs and submit applications to the South Carolina Department of Natural Resources for the Flood Mitigation Assistance program. Projects must meet both FEMA and HUD requirements to be eligible for funding.

Eligible Applicants: Units of General Local Government located in SC MID or HUD MID counties

Eligible National Objectives: LMI Direct Benefit, LM-Buyout, LMI Area Benefit, Mitigation Urgent Need

Eligible Activities: All activities allowed under CDBG-MIT including but not limited to flood control and drainage improvements, including the construction or rehabilitation of stormwater management systems; infrastructure improvements (such as water and sewer facilities, streets, provision of generators, removal of debris, bridges, etc.); natural or green infrastructure; communications infrastructure; buyouts or acquisition with or without relocation assistance, down payment assistance, housing incentives, and demolition; activities designed to relocate families outside of floodplains; and Hazard Mitigation Plan updates

Executing Jurisdiction(s): UGLG subrecipients

Total Budget: \$5 million

Planning

SCDRO will use planning funds for the development and amendment of the mitigation action plan. Additionally, the SCDRO will provide funding to the South Carolina Emergency Management Division, Councils of Government (COGs), and units of general local government for the development or updating of hazard mitigation plans, and the development of flood-reduction studies to identify potential projects that could be funded through phase 2 or phase 3 of the infrastructure program. SCDRO will solicit applications from UGLGs located in the SC and HUD-defined MID counties to disperse planning funds. The planning activity will not exceed fifteen percent of the total grant.

Program Administration

State administrative costs will not exceed 5 percent of the total grant. Planning and administrative costs combined will not exceed 20 percent. The provisions outlined under 42 U.S.C. 5306(d) and 24 CFR 570.489(a)(1)(i) and (iii) will not apply to the extent that they cap state administration expenditures and require a dollar-for-dollar match of state funds for administrative costs exceeding \$100,000. Additionally, the provisions outlined under 42 U.S.C. 5306(d)(5) and (6) will not apply; instead, the aggregate total for administrative and technical assistance expenditures will not exceed 5 percent of the grant amount plus 5 percent of program income generated by the grant.

The SCDRO will retain the full 5 percent allocated for administrative costs associated with the CDBG-MIT allocation for purposes of oversight, management, and reporting. Any subrecipients that receive funds will not be entitled to administrative costs given the design of the SCDRO mitigation programs, wherein all grant administration is executed by the SCDRO, and subrecipients will implement programs based on the SCDRO program guidelines. Thus, all activities conducted by subrecipients are considered activity delivery costs.

Program Administration

Citizen Participation Plan

The State values citizen and stakeholder engagement. South Carolina has developed a Citizen Participation Plan in compliance with § 24 CFR 91.115 and applicable HUD requirements to set forth the policies and procedures applicable to citizen participation. This plan is intended to maximize the opportunity for citizen involvement in the planning, development, and execution of the South Carolina CDBG-MIT program.

In order to facilitate citizen involvement, South Carolina has identified target actions to encourage participation and allow equal access to information about the program by all citizens. South Carolina intends to focus outreach efforts to facilitate participation from individuals of low and moderate income, non-English speaking persons, and other disadvantaged populations. The State will publish its Action Plan in Spanish as well as English. In addition to citizen involvement, South Carolina encourages the participation of regional and State-wide institutions.

South Carolina will consider any comments received in writing, via email, or expressed in-person at official public hearing events. Additionally, to permit public examination and public accountability, South Carolina will make the above information available to citizens, public agencies, and other interested parties upon request.

Public Hearings

South Carolina will hold three public hearings during Action Plan development to collect input from citizens and other stakeholders. Notice of public hearings will be announced on the South Carolina Disaster Recovery Office (SCDRO) website, in the local newspapers, and on social media. Public hearings will be held at a time and location convenient to potential and actual beneficiaries. SCDRO will have the capability to take questions and comments in English and Spanish at each of the public hearings. South Carolina will consider any comments or views of citizens received in writing or orally at the public hearing and the responses to those comments are in the Appendix.

Individuals who require auxiliary aids or special assistance at public hearings must make a request at least forty-eight hours in advance of the event to the SCDRO by contacting (803) 896-4068 or DRMitigation@admin.sc.gov. Citizens with hearing impairment can call Relay South Carolina at 7-1-1 for assistance.

Public Hearings schedule is as follows:

Tuesday, November 26, 2019: **Williamsburg County – 6PM to 7PM**
Williamsburg County Complex Auditorium
147 West Main Street, Kingstree, SC 29556

Monday, December 16, 2019: **Horry County – 6PM to 7PM**
Burroughs & Chapin Auditorium, Building 1100
2050 Hwy 501 E., Conway, SC 29526

Public Notice and Comment Period

Notice of public comment period will be provided by publication on the South Carolina Disaster Recovery Office website. South Carolina will open the citizen comment period for the following timeframes:

- Comment period for the original Action Plan will take place for forty-five (45) days after the publication of the Action Plan to the SCDRO website.
- Comment period for Substantial Amendments will take place for thirty (30) days after the publication of the Substantial Amendment to the SCDRO website.

Action Plan

The Action Plan defines how South Carolina will effectively use all available funding to support a data-driven mitigation effort based on the calculation of need across South Carolina. The Action Plan describes the State's proposed allocation by activity and lays out program design for each area of assistance, as well as identifying the beginning and end dates for each mitigation activity, and performance and expenditure schedules.

Before South Carolina adopts the Mitigation Action Plan, the State will seek public input on program design issues including the amount of assistance South Carolina expects to receive, the range of activities that may be undertaken, the estimated amount that will benefit persons of low-to-moderate income and plans to mitigate displacement.

A summary of all comments received will be included in the final Action Plan submitted to HUD for approval. The final Action Plan approved by HUD will be posted to the SCDRO website.

Amendments to the Action Plan

South Carolina will engage citizens throughout the program lifecycle to maximize the opportunity for input on proposed program changes that result in a Substantial Amendment. Program changes result in a Substantial Amendment when there is:

- An addition or deletion of any allowable activity described in the approved application;
- The addition of a covered project;
- An allocation or re-allocation of more than \$5 million; or
- A change in planned beneficiaries.

Citizens will be provided with no less than thirty days to review and provide comment on proposed substantial changes. A summary of all comments received will be included in the final Substantial Amendment submitted to HUD for approval. Final Substantial Amendments approved by HUD will be posted to the Disaster Recovery website.

For other non-substantial amendments, the State shall notify HUD, but public comment is not required. Every amendment, substantial or not, shall be numbered sequentially and posted on the SCDRO website, not replacing, but in addition to all previous versions of the plan.

Performance Reporting

In accordance with HUD requirements, South Carolina will submit a Quarterly Performance Report (QPR) through the HUD Disaster Recovery Grant Reporting (DRGR) system no later than thirty days following the end of each calendar quarter. No later than three days after submission to HUD, South Carolina will post each QPR on the SC Disaster Recovery Office website. Program QPRs will be posted on a quarterly basis until all funds have been expended and all expenditures have been reported.

Limited English Proficiency

South Carolina is committed to providing all citizens with equal access to information about the recovery program, including persons with disabilities and limited English proficiency (LEP). The State follows HUD's regulation, 24 CFR Part 1, "Nondiscrimination in Federally Assisted Programs of the Department of Housing and Urban Development—Effectuation of Title VI of the Civil Rights Act of 1964," which requires all recipients of federal financial assistance from HUD to provide meaningful access to LEP persons.

Persons who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English may be entitled to language assistance with respect to a service, benefit, or encounter. Where a significant number of non-English speaking residents can be reasonably expected to participate in public hearings or open comment periods, materials to be handed out will be translated into the appropriate language, citizen comments in a language other than English will be translated, and translators will be present.

As a result of initial population analysis, the Action Plan, any ensuing amendments, outreach materials and the application and related guidance materials will be published in both English and Spanish. When needed, the State will use an "I speak" visual chart containing a wide range of language samples for applicants to point to in request for specialized translation services.

Technical Assistance

Upon request, limited technical assistance will be provided by SCDRO program staff. Requests should be made in a timely manner and within the time parameters of the appropriate program design. The State may contract with a Technical Assistance Provider(s) should enough demand for technical assistance warrant.

Citizen Complaint Procedures

The State of South Carolina will handle citizen complaints through a Constituent Services Team, which will act as the program's "Ombudsman." All complaints received by the State, its CDBG-MIT Contractor(s), and/or other program sources, will be reviewed by the Constituent Services Team for investigation as necessary. The Constituent Services Team will ensure complaints are resolved, escalated to appropriate personnel if needed, and any necessary follow-up actions are completed. All complaints will be forwarded to HUD.

The aim of the State will be to always attempt to resolve complaints in a manner that is both sensitive to the complainant's concerns and that achieves a fair result.

The goal of the State and its Constituent Services Team is to provide an opportunity to resolve complaints in a timely manner, usually within 15 business days, as expected by HUD, if practicable, and to provide the right to participate in the process and appeal a decision when there is reason for an applicant to believe their application was not handled according to program policies. All applications, guidelines, and websites will include details on the right to file a complaint or appeal, and the process for filing a complaint or beginning an appeal.

During the program's operations, decisions will be made on housing assistance applications and/or projects to be completed. These decisions will be made based on applicable statutes, codes of federal regulation, State and local codes and ordinances, and program operational procedures, as each is interpreted by the State of South Carolina. During these activities, it is possible that citizens may decide they have a legitimate reason to appeal a decision. Applicants and/or beneficiaries can appeal program decisions related to one of the following activities:

1. A program eligibility determination
2. A program assistance award calculation

Citizens may file a written complaint or appeal through the Disaster Recovery email at ContactSCDR@scdr.sc.gov or submit by postal mail to the following address:

Attention: Constituent Services
South Carolina Disaster Recovery Office, 632 Rosewood Drive, Columbia, SC 29201

South Carolina will make every effort to provide a timely written response within 15 working days of the receipt of complaint, where practicable. If the complainant is not satisfied by the Constituent Services' response, the complainant may file a written appeal by following the instructions issued in the letter of response. If at the conclusion of the appeals process the complainant has not been satisfied with the response, a formal complaint may then be addressed directly to the regional Department of Housing and Urban Development (HUD) at:

Department of Housing & Urban Development
1835 Assembly Street, 13th Floor, Columbia, SC 29201

State Outreach

During the development of this Action Plan, the State will conduct in-person meetings with key regional stakeholders as well as the general public. The State has conducted meetings with Councils of Government (COGs), county administrators, legislators, public representatives, academic institutions, and other state agencies throughout the development of the mitigation needs assessment, projected budget, activities and program administration as set forth in this Action Plan.

SCDRO began this outreach effort in conjunction with the development of the watershed study that informed the flood-reduction infrastructure activity. Outreach efforts thus far included meeting with approximately 155 people in eight sessions over a one-month period (mid-January 2019 to mid-February 2019) to solicit ideas and input for the Santee and Pee Dee Watershed Study. The meetings were coordinated with and through five of the COGs:

Waccamaw
Santee Lynches

Pee Dee
Lower Savannah

Berkeley-Charleston-Dorchester

At the request of local jurisdictions, SCDRO met separately with Williamsburg County, Horry County, and the City of Sumter.

Ultimately, there were a total of 196 project ideas collected in the meetings, submitted via a drop site, and developed by the watershed study contractor.

SCDRO staff met with the SC Association of Counties, SC Municipal Association and made a presentation to the SC Association for Hazard Mitigation on the status of the planning efforts.

SCDRO staff met with Horry County government officials and citizens at the request of Congressman Rice on October 2, 2019. SCDRO presents information on the mitigation plan development at the SCDRO monthly Stakeholder Briefings.

SCDRO has partnered with and met monthly with the SC Department of Natural Resources and the University of South Carolina Hazard & Vulnerability Research Institute. SCDRO has also been engaged with the SC Emergency Management Division and the State Hazard Mitigation Officer in the development of the CDBG-MIT program.

Program Income

The State does not intend to implement any programs that generate income as described in 24 CFR 570.489. If program income is generated, the State of South Carolina will utilize program income as follows: Income received prior to the grant closeout will be utilized as additional CDBG-MIT funds in the same manner as other CDBG-MIT funds referenced; any income received after the grant closeout, will be transferred to South Carolina's annual CDBG award.

Pre-agreement Activities

The provisions of 24 CFR 570.489(b) and 570.200(h) permits a State to reimburse itself for otherwise allowable costs incurred by itself or its recipients, subgrantees, or subrecipients prior to the release of the CDBG-MIT funding. The provisions at 24 CFR 570.200(h) and 570.489(b) apply to grantees reimbursing costs incurred by itself or its recipients or subrecipients prior to the execution of a grant agreement with HUD. This includes but is not limited to activities supporting program development, action plan development and stakeholder involvement support and other qualifying eligible costs incurred in response to the activities covered under Public Law 115-123.

The South Carolina Department of Administration incurred pre-award costs and will seek reimbursement for these costs that are reasonable and allowable under this regulation. The Department of Administration intends to recover the pre award costs consistent with the authority cited in this section. These costs include the cost for salary, employer fringe benefits, and direct operating cost for each employee based on their individual percentage of time spent on the planning of the CDBG-MIT program. The total pre-award costs accumulated by the SCDRO were \$239,300 as of December 1, 2019.

Mitigation Pre-award Implementation Plan

The South Carolina Department of Administration is the administrator and fiscal agent for the CDBG-MIT grant. The Department has prior experience in managing HUD funds through the CDBG-DR allocations which preceded the CDBG-MIT award.

The Department of Administration, through the South Carolina Disaster Recovery Office, has existing systems and procedures, as well as formally established monitoring strategies that meet or exceed regulatory requirements including those related to HUD program rules and regulations, civil rights, environmental, labor standards, fair housing, citizen participation and recordkeeping.

South Carolina will manage grant funds responsibly, efficiently and transparently. The State has the financial management systems, policies, procedures and practices necessary to uphold fiscal responsibility as detailed in this Implementation Plan.

Financial Controls

The State of South Carolina certifies proficiency in financial management using established financial systems and internal controls. The sections below provide further description of existing risk management measures.

Additional information can be found in the HUD Financial Management Guide, completed by the State, which answers specific questions about financial standards and which personnel or unit are responsible for each item. The completed guide and accompanying procedures will be submitted to HUD in addition to the Action Plan and Implementation Plan.

Single Audit

The State of South Carolina is in full compliance with Single Audit requirements. The State's annual expenditures are consistently reviewed every year by the Office of the State Auditor to evaluate whether the State's major federal programs follow laws, regulations, contracts and grant rules as applicable to each program. The State maintains reports and working papers for each annual report for a minimum of three years from the date of submission to the Federal Audit Clearinghouse.

South Carolina will monitor subrecipients for compliance with financial administration requirements in accordance with Single Audit requirements previously stipulated in OMB Circular A-133, now codified in 2 CFR 200, Subpart F. The Department requires all program subrecipients who expend more than \$750,000 in federal funds during the fiscal year to submit their Single Audit review through the State's Federal Audit Clearinghouse or directly to the State for review for material weaknesses and findings or concerns. Subrecipient compliance with audit requirements has been and will continue to be maintained through an internal monitoring tracking system updated on a routine basis. This system was designed as part of a corrective action plan to a Single Audit Finding in the South Carolina Statewide Single Audit for the Year Ended June 30, 2015. The audit identified that one of the program subrecipients failed to provide the State with a copy of their Single Audit by the deadline.

The State's Single Audit is available at: <https://osa.sc.gov/wp-content/uploads/2019/03/18-Single-Audit-Report.pdf>

Financial Management Systems

South Carolina Department of Administration maintains accounting and grants management systems to support a multi-functional grants management program. These systems provide accurate, current and complete disclosure of the financial status of each CDBG-DR and CDBG-MIT supported activity, according to the terms and conditions of the Grant Award Agreement. These systems are audit-tested and confirmed to meet all Federal and State requirements.

Recipient accounting records are supported by source documentation stored in compliance with record-keeping requirements. South Carolina has financial record-keeping practices to retain source documentation for accounting records that will be applied to the CDBG-MIT program to ensure records adequately identify the source and application of CDBG-MIT funds provided and maintain source documentation to evidence the costs incurred and dates of expenditure.

Internal Controls

The Department has existing policies and procedures meeting financial management requirements including: applicable regulations and requirements, financial accountability and records, authorized signatures for payments and checks, requests for payments, bank accounts and checks, escrow accounts, administrative costs, property management, and audit requirements. The department has cash management procedures in place that minimize the elapsed time between receipt and disbursement of CDBG funds.

The organizational structure encompasses risk management measures that establish clear lines of authority and approval, segregation of duties, separation of key processes and authorization and secure access to financial resources. The program financial division is overseen by the Chief Financial Officer with sub-divisions for Financial Monitoring & Compliance, and Financial Management. A full organizational chart can be found in the Capacity and Staffing section of this plan.

In summary, the Department's internal controls are set up for responsible management of CDBG-MIT funds and support the prevention of fraud, waste and abuse to ensure:

- No person involved in the program decision-making obtains financial benefit
- No single-point sign-off of significant transactions
- Separate recordkeeping for mitigation funds versus general accounting operations
- Reconciliation of accounts performed by employees not responsible for handling payroll preparation and issuance of paychecks
- Hiring procedures match required financial skill sets to position descriptions
- Policies and procedures are in place to maintain effective control and accountability for all cash, real and personal property and other assets
- Policies and procedures are in place for controlled access to assets and sensitive documents
- Reasonable measures are in place to safeguard protected personally identifiable information (PII)

Procurement

Procurements for CDBG-MIT programs are governed by those specific procurement requirements set forth under 24 CFR Part 570, Part 85, 2 CFR 200.318-200.326 and all applicable State laws and regulations. Aligned with the requirements of these federal regulations, when procuring property or services to be paid for in whole or in part with CDBG-DR or CDBG-MIT funds, South Carolina will follow its own procurement policies as those procedures are as stringent, or more so, than the federal procurement requirements. Furthermore, the State shall ensure that each procurement occurs with full and open competition.

South Carolina has a two-tiered procurement system for State agencies. Agencies have direct authority to make purchases below a certain dollar threshold. Above that amount (which differs for each agency), procurements are conducted under the authority of a central procurement office that serves all State

agencies covered by the South Carolina Consolidated Procurement Code. Known as Procurement Services, this office involves three subdivisions with purchasing authority: the Office of the State Engineer (OSE), the Information Technology Management Office (ITMO), and the State Procurement Office (SPO).

The policies and procedures shall also include ethical standards of conduct governing employees engaged in the award or administration of contracts. Recipient will maintain a written code of standards of conduct governing the performance of their employees engaged in the award and administration of contracts. Conflict of Interest provisions listed at 24 CFR Part 85.36 (3) and all other applicable federal regulations will be incorporated.

Generally, the governing statutes can be found at *Title 11, Chapter 35 of the South Carolina Code of Laws*. Procurements subject to the South Carolina Procurement Code (S.C. Code Ann. § 11-35-10 et. seq. 1976, as amended) are also governed by procurement regulations promulgated by the South Carolina Revenue and Fiscal Affairs Authority, which are available in Article 19 of the South Carolina Code of Regulations. (The Procurement Regulations begin at Regulation 19-445.2000.) Methods of procurement (e.g., small purchase, sealed bids/formal advertising, competitive proposals, and noncompetitive proposals) and their applicability shall be specified by the State.

As outlined in the following table and in the South Carolina Procurement Code and Regulations, the State uses a variety of competitive source selection processes, including three simplified "small purchase" procedures, five standard competitive procedures (competitive sealed bidding, competitive best value bidding, competitive fixed price bidding, competitive on-line bidding, and competitive sealed proposals), qualification based selection procedures for the acquisition of construction-related professional design services; and, indefinite delivery contracts for construction and related design services. A primary focus for the State is that opportunities be made available for small and minority businesses. Accordingly, the State maintains a robust Small & Minority Business Contracting and Certification Program.

South Carolina's procurement policies of the State align with the requirements set forth under 2 CFR 200.318-200.36 ensuring fair and open competition. Further ensuring consistency with federal requirements, South Carolina shall ensure that all purchase orders and contracts include any clauses required by Federal statutes, executive orders and implementing regulations. The full set of South Carolina procurement processes and the laws and regulations applicable thereto can be located at <http://procurement.sc.gov/legal/procurement-law>.

The following table provides a cross-reference between the federal regulatory requirement and its counterpart under South Carolina's procurement law:

| <i>Federal Citation</i> | <i>Short Title</i> | <i>South Carolina Consolidated Procurement Code & South Carolina Budget and Control Board Regulations 19-45-445, et seq.</i> | <i>Short Title</i> |
|--------------------------------|---|--|--|
| 2 CFR 200.318 | <i>General Procurement Standards</i> | §11-35-20 | <i>Purposes and Policies</i> |
| 2 CFR 200.319 | <i>Competition</i> | §11-35-20(a)-(h) | <i>Purposes and Policies</i> |
| 2 CFR 200.320 | <i>Methods of Procurement to be followed</i> | §§11-35-1510-1580 | <i>Methods of source selection; Methods of Procurement to be followed including, but not limited to, Micro Purchases (§11-35-1550(2)(a)), Small Purchases, Competitive Sealed Bidding, Competitive Proposals and Non-Competitive Proposals/Sole Source</i> |
| 2 CFR 200.321 | <i>Contracting with Small, Minority, Women Owned Bus.</i> | §§11-35-5010; 11-35-5210; 11-35-5230; 11-35-5240; 11-35-5260; 11-35-5270 | <i>Article 21: Assistance to Minority Businesses; includes: Statement Policy/Implementation, Regulations for negotiations with State Minority Firms; MBE Utilization Plan; Reporting; Division of Small/MBE Certification</i> |
| 2 CFR 200.322 | <i>Procurement of Recovered Material</i> | §11-35-3810; 19-445.2150 | <i>Surplus Property Management</i> |
| 2 CFR 200.323 | <i>Contract Cost and Price</i> | §§11-35-2010(1); 11-35-3510; 11-35-1830; 11-35-1210(2)(C); 11-35-1550(2)(a); 11-35-1830; 11-35-3040; 11-35-3050; 11-35-3410(2)(a); 11-35-5230(a)(5) | <i>Cost and/or Pricing Data; Contract Price Adjustments; Cost Principles; Fair and Reasonable Price Minority Firms</i> |
| 2 CFR 200.324 | <i>Federal Awarding or pass-through Entity review</i> | <i>(Compliance with this reg. to be achieved through execution of implementation of grant agreement with HUD)</i> | |
| 2 CFR 200.325 | <i>Bonding Requirements</i> | §11-35-3030; 19.445-2145(C)(M) | <i>Bond and Security</i> |
| 2 CFR 200.326 | <i>Contract Provision</i> | §11-35-3040 | <i>Contract Clauses and their Administration</i> |

Duplication of Benefits

In accordance with the *Robert T. Stafford Disaster Relief and Emergency Assistance Act*, Public Law 93-288 as amended, 42 U.S.C. 5121-5207, the State will implement policies and procedures to ensure no individual receives duplication of benefits (DOB) for the same purpose and/or effect to recover from the disaster through the CDBG-MIT funds. Federal law prohibits any person, business concern, or other entity from receiving Federal funds for any part of such loss as to which he has received financial assistance under any other program, from private insurance, charitable assistance or any other source. The State has a program policy manual with guidance that funds determined to be a duplication of benefit will be deducted or otherwise offset from the amount of assistance available to the applicant through the CDBG-MIT programs.

To prevent DOB, the State will require that all sources (federal, State, local, private) and amounts of disaster assistance received or reasonably anticipated to be received are documented with submission of an application for CDBG-MIT funding. The State will procure a qualified vendor to implement DOB procedures in review of each application. The hired vendor will perform a basic calculation known as the Housing Assistance Award Calculation which is completed by: (1) Determining each applicant's mitigation need; and then (2) Reducing that remaining mitigation need by previously received funding for housing recovery if for the same purpose as the mitigation need, if any (less amounts expended on Allowable Activities). This activity will be monitored for accuracy and completeness by the State Monitoring and Compliance division.

The State will consider all amounts received/approved from alternate sources such as FEMA, insurance coverage, SBA and/or philanthropic organizations used to make repairs due to a declared disaster damage since the 2015 severe storms. Duplication of benefit for housing programs will only consider other sources of funding pertaining to structural damage caused by the disaster, assistance for contents and personal items will not be considered duplication. The State currently has secured data sharing agreements with FEMA and SBA to ensure the most recent assistance data is used in confirming other Federal assistance.

All applicants will be required to sign a Subrogation agreement upon application to the program. Applicant awardees must subrogate any additional funds received for the same purpose as the CDBG-MIT funding.

Timely Expenditure

Timeliness of expenditure for the grant funds under Public Law 113-123 is defined as 6 years from the time of HUD's execution of the grant agreement for the first 50% of funds and all funds expended within 12 years of the grant agreement. South Carolina will comply with this timeline by implementing effective budgeting and maintenance of expenditure projections. Within the 12-year grant timeline, there are also requirements for prompt payment as part of the general financial management process. The State will reconcile these projects with actual transactions as tracked in the general ledger on a regular and frequent basis.

The State will track expenditure projections monthly over the life of the award utilizing the HUD-provided Projection of Expenditures and Outcome Template, in conjunction with the Disaster Recovery Grant

Reporting (DRGR) system. South Carolina will submit a complete projection of expenditures within 120 days after the initial Action Plan has been submitted through the DRGR system. Revised projections will be sent to HUD when program changes impact projected outcomes, funding levels, and recovery timelines.

The State of South Carolina has adequate databases and procedures in place to monitor program expenditures, track timeliness of expenditures, evaluate grant recipient performance, and monitor overall financial and programmatic compliance status of HUD grant funds. The State has existing, mature systems in place to administer HUD CDBG grants, which have been audit-tested and received no findings from HUD regional or OIG audit teams.

The State will manage financial transactions through the SCEIS record system and will use either its existing grants management system or an alternative file or record system operated by the Implementation Contractor who may undertake implementation of the State's CDBG-MIT grant, provided that the alternative system can provide comparable utility with respect to financial and programmatic grant management. The grants management system contains extensive detail about grant-funded projects and is used to generate award documents, financial reports, voucher summaries, fiscal and program year HUD grant financial status reports. It is also used to generate payment vouchers when pay requests are received from grant recipients. For HUD CDBG grants, these vouchers are entered into the State's SCEIS financial database and then into the HUD database.

With respect to timely expenditures, the State will track expenditure projections based on the date the HUD CDBG-MIT grant is signed, award dates for all subrecipients of CDBG-MIT funds, payment request dates and amounts, and date funds are received from HUD. Other data elements will be added as necessary to provide information sufficient to monitor timeliness of recipient expenditures, time elapsed since last recipient draw, time elapsed since recipient grant award, percent of recipient grant drawn compared with progress on the funded project, as indicated by recipient status reports, etc. Grants which appear to be lagging will be evaluated and, consistent with the State's CDBG-MIT Action Plan, either: a) provided technical assistance to remediate their slow progress state, b) terminated if the project appears to be stalled at startup and the Action Plan allows for re-award to other eligible recipients, or c) the project scope will be reduced and the recipient award reduced as necessary and recaptured funds re-obligated to other eligible projects and recipients. As with the State's existing CDBG Program, the focus will be on identifying fast-moving projects and recipients that have already demonstrated competence in expeditiously moving projects forward, drawing funds and moving projects toward completion.

Consistent with the State's CDBG-MIT Action Plan, the goal will be to obligate funds that will be available for recipients (i.e., excluding funds set-aside for program administration) as soon as possible in order to maximize the amount of time new recipients have to implement projects and expend available funds. Recipients will be required, as they are for the State CDBG Program, to identify under-budget contracts, changes in beneficiary eligibility, project scope changes, etc. as soon as possible. This will allow the State to identify funds recipients are not expected to draw, permitting the State to identify recipients with on-track projects where recaptured funds can be redirected, and reduce funds awarded to non-performing recipients or recipients at risk of non-performing. Where necessary, the State will identify additional

eligible recipients and projects (per the State's CDBG-MIT Action Plan) that have existing funded projects and require additional funding for new/expanded project activities, or that have projects that can move forward immediately. This will allow for the State to expeditiously expend funds to accomplish program goals while complying with all applicable requirements.

Management of Funds

Monitoring will be conducted by the Department of Administration and the SCDRO based on a pre-defined risk analysis and will be conducted on a frequency as determined by the analysis which will include frequent desk review and periodic on-site visits. SCDRO will monitor funds using the HUD Disaster Recovery Grant Reporting (DRGR) system and meetings hosted by the Director of Support and Reporting Manager (DRGR Specialist). Audit functions will be conducted by the designated Department of Administration auditors as outlined in the Financial Roles section of this document. The risk analysis will consider criteria consistent with HUD guidance and individualized risk mitigation strategies will be prepared for each funding recipient. The State will follow steps for identifying risks that include the following:

- Identify what CDBG-MIT projects and performance areas are to be assessed;
- Insure that risk is identified and analyzed;
- Assign weight to risk factors;
- Develop rating criteria and methods to assessing risk;
- Determine rating by factor;
- Establish criteria for risk "profiles" for each Funding Recipient;
- Compile scores and rank organizations; and
- Utilize resources for monitoring and risk mitigation.

The State may initiate additional, unscheduled monitoring efforts at any time based on analysis of risk indicators. The State will utilize existing processes for the annual CDBG program for conducting on-site reviews that include written monitoring and technical assistance guidelines, checklists, and policies and procedures. Project files will be reviewed for compliance with HUD requirements.

In July 2015, the HUD field office reviewed monitoring procedures, execution of those procedures and adherence to guidance and timelines for the state's annual CDBG program administered by the South Carolina Department of Commerce. The final audit report determined the State's oversight and monitoring program to be in compliance with HUD standards. In the HUD On-Site Monitoring Report conducted July 2015, HUD determined "that the State's oversight/monitoring of its recipients meets the standards found at 24 CFR 570.492 and the Housing and Community Development Act (HCDA) Section 104(e)(2) to conduct reviews and audits of its recipients to determine compliance with applicable laws and Title 1 regulation." A copy of the report can be found attached to this plan in appendix format. SCDRO will continue to use similar procedures and processes to manage and audit funds for this grant.

Contractor compliance will be maintained through the review and approval of monthly project performance reports, financial status reports, and documented requests for reimbursement throughout the contract period. The State will utilize the HUD- provided contract reporting template for upload to the DRGR on a quarterly basis: <https://www.hudexchange.info/resource/3898/public-law-113-2-contract-reporting-template/>.

Beginning shortly after commencement of contracted activities, risk-based on-site monitoring will occur as appropriate to contracted activities and award amounts. At least one on-site monitoring visit will occur prior to project completion, to verify funds were expended appropriately.

All program activities will meet HUD requirements for national objectives, which will be supported by documentation in the program file system of record. South Carolina will not undertake activities other than those activities authorized by the CDBG program CFR 570.201-206. Examples of ineligible activities include:

- Buildings for the general conduct of government,
- General government expenses,
- Financing for partisan political activities,
- Purchases of equipment,
- Purchases of personal property, and
- Operating and maintenance expenses for public facilities except as permitted by the waiver in Section V.A.9, 84 FR 45838, at 45855.

South Carolina is dedicated to prioritizing assistance toward residents that face the most financial barriers to recovery and fully intends to comply with the HUD Low-to-Moderate Income (LMI) national objective requirement of 50% of the total grant. Residents will be required to provide household income information and supporting documentation at the time of application for processing and verification. South Carolina will apply a methodical approach to applicant assistance that assigns priority to program applicants based on household income and other social vulnerability factors. Mitigation funds will be accounted for in order of ranked priority to allow program staff to consistently budget funds toward the most feasible beneficiaries, in as fluid a manner as possible.

The State has a Director of Internal Audit on staff. The audit staff overseen by the Director of Audit will perform a full compliance and financial audit review. The auditor will review files and test for compliance with financial standards and procedures including procurement practices and adherence to cost reasonableness for all operating costs and grant-funded activities. All program expenditures will be evaluated to ensure they are:

- Necessary and reasonable;
- Allocable according to the CDBG contract;
- Authorized or not prohibited under State/local laws and regulations;
- Conform to limitations or exclusions (laws, terms, conditions of award, etc.);
- Consistent with policies, regulations and procedures;
- In accordance with appropriate professional accounting standards;

- Adequately documented; and
- Treated consistently (with non-CDBG costs).

The State of South Carolina is dedicated to the prevention of fraud, waste and abuse. All suspected cases of fraud will be taken seriously and reported to the South Carolina Office of the Inspector General for further investigation: <http://oig.sc.gov/Pages/default.aspx>.

Comprehensive Mitigation Website

In accordance with HUD requirements, South Carolina will maintain a public-facing website with program information pertaining to applicants and stakeholders posted on an ongoing basis. Website information will be updated on an as needed basis, and at a minimum monthly. The initial website will reside on the South Carolina Disaster Recovery Office website at <http://www.scdr.sc.gov> during action plan development and program setup. The State plans to design, launch and maintain a customized program website shortly after execution of the Grant Agreement and program implementation begins. The public website serves as a central source for program information and transparency in the management of federal dollars. It is a powerful tool for public participation and engagement.

The State of South Carolina follows ADA-compliant standards for website accessibility and readability. Content and webpage layout is designed with best practices for adaptive aids use in mind. The State also supports accommodation for citizens with limited English proficiency and will publish program documents to the public website in languages other than English based on the need of non-English speaking communities.

The Department of Administration maintains ownership of the Department's current website and is involved in publishing all content to the page in cooperation with SCDRO staff. Content for the site will be generated from all aspects of the program and will be drafted by operational staff with purview over the subject matter. All content will undergo draft review before final approval prior to posting. The following program information that will reside on the website includes but is not limited to:

- Announcement of Public Hearings will be posted to the website as well as local newspapers.
- Action Plan for Mitigation will be posted to the SCDRO website for no less than 45 calendar days to solicit public comment before being submitted to HUD. The final approved Action Plan will then be posted to a permanent section on the website designated for Action Plans and Amendments.
- The DRGR Action Plan will be posted to the program website once established.
- Substantial Action Plan Amendments will be posted on the SCDRO website for no less than 30 calendar days to solicit public comment before being submitted to HUD. The final approved Action Plan Amendment will then be posted to a permanent section on the website designated for Action Plans and Amendments.
- Non-substantial Action Plan Amendments will not be posted for public comment. These Amendments will be posted to a permanent page designated for Action Plans and Amendments.
- Each Quarterly Progress Report (QPR) will be posted to the program website within 3 days of being submitted to HUD.
- The Citizen Participation Plan will reside permanently on the program website.

- An electronic portal for citizen complaints and concerns will be located on the program website.
- Program announcements will be posted to the program website on a rolling basis as approved by the Program Director.
- Executed contracts.

Timely Information on Application Status

South Carolina will implement a centralized application management system with real-time access to application status. Applicants can obtain timely communication about their application status at any time during operational hours by contacting a case manager via telephone, leaving an after-hours voicemail message to be returned the following business day, or by submitting an email inquiry.

Case managers will be available for face-to-face intake meetings as requested by the applicant. Accommodations can be made ahead of time for applicants with physical disabilities and/or a need for translation services.

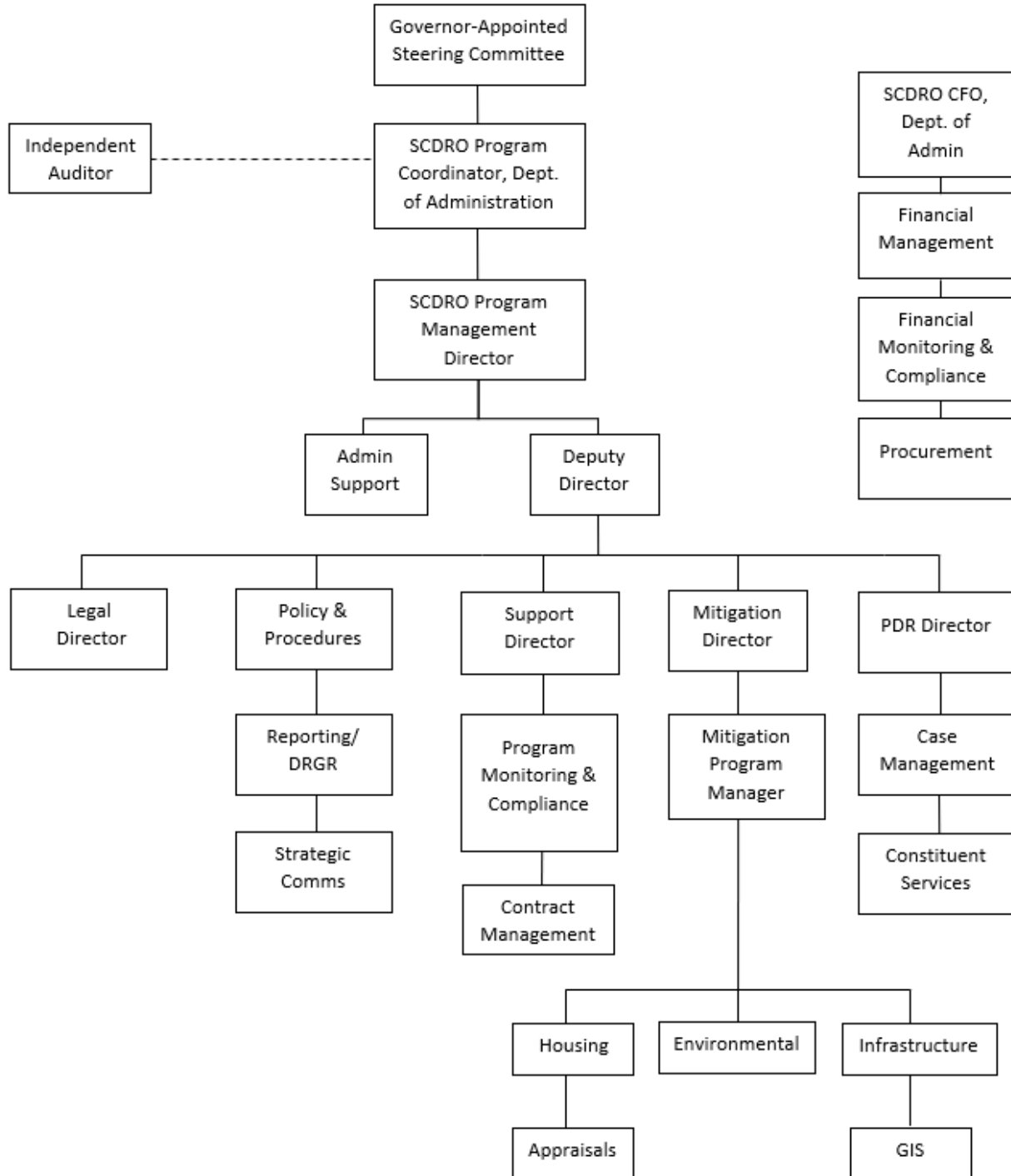
Proactive communication from the program regarding application status will occur on a frequent basis during initial intake. At which time, program staff will proactively contact applicants to request missing eligibility documentation and verify information entered on the application form. Once all documentation is received, verbal communication may subside until the applicant is contacted through an official letter with information regarding eligibility.

The State will also institute a Constituent Services Team focused on resolving complaints in a timely manner, usually within fifteen (15) business days, as expected by HUD, if practicable. The Constituent Services Team protects the applicant's ability to participate in the process and appeal a decision when there is reason for an applicant to believe their application was not handled according to program policies. All applications, guidelines, and websites will include details on the right to file a complaint or appeal, and the process for filing a complaint or beginning an appeal. As required, SCDRO will forward all complaints received to HUD.

Capacity Assessment & Staffing

South Carolina has conducted a thorough capacity assessment and developed the current administrative structure (as shown below) for positions to support critical management, oversight and implementation.

South Carolina DRO: Administrative Structure



Key staff members, particularly those in the financial management section, have prior experience with the October 2015 and 2016 CDBG-DR programs. The position descriptions outlined below align with the functional areas identified in the organizational chart and may include technical SCDRO titles not detailed in the organizational chart. SCDRO intends to fill all vacant Mitigation positions within 30 days of the Action Plan approval from HUD. SCDRO positions are as follows⁴³:

The South Carolina Disaster Recovery Steering Committee - In Place

The State Disaster Recovery Steering Committee advises the South Carolina Disaster Recovery Office (SCDRO) regarding general directives, strategic policy decisions and prioritization of the State's recovery and HUD-funded mitigation efforts. SCDRO represents diverse interests across the State, communicates and coordinates services and events, and provides strategic planning for the recovery response.

The State Disaster Recovery Steering Committee members are selected by the Governor. Members of the Committee elect the chairperson.

SCDRO Program Coordinator – Filled

The State Disaster Recovery Program Coordinator ensures that the program activities align to the State Disaster Recovery Steering Committee's general directives, strategic policy decisions and prioritization. The SCDRO Coordinator also ensures proper and adequate evaluations of programs, provides for financial solvency and security; preserves independence and enhances the public image among all constituencies. The SCDRO Coordinator functions in the accountable role of Chief Executive Officer and signatory.

SCDRO Program Management Director - Filled

The SCDRO Program Management Director directs, implements, coordinates, and advocates disaster recovery goals, objectives, and outcomes set by the State. The SCDRO Program Management Director takes a holistic view of implementation as sets of project activities, linking internal local government activities with those of the community's stakeholders to ensure progress and completion of outcomes identified in State plans, strategies, or other recovery objectives. This position reports to the SCDRO Program Coordinator, who serves as Executive Officer of the program.

SCDRO Deputy Program Management Director- Filled

The SCDRO Deputy Director directs, implements, coordinates, and advocates disaster recovery goals, objectives, and outcomes set by the State. The Deputy Director provides overall management, strategic operations, administrative support, and communication for the recovery effort. The Director provides executive direction to ensure efficient administrative and operational oversight of readiness and field operations. Leads the conceptualization, development, coordination, and evaluations of policies to ensure program coordination guidance and policies are in alignment with State Action Plan.

⁴³ The organizational chart and corresponding positions outlined in this plan may be modified as needed throughout the implementation process as warranted by the needs of program.

Administrative Assistant - Filled

This position provides administrative support for the Disaster Recovery Management Director and Disaster Recovery Office. In addition to typing, filing and scheduling, performs duties such as financial record keeping, coordination of meetings and conferences, recording and transcribing steering committee minutes, obtaining supplies, coordinating mailings, and working on special projects. Also, answers non-routine correspondence and assembles highly confidential and sensitive information. Deals with a diverse group of important external callers and visitors as well as internal contacts at all levels of the organization.

Mitigation Director - Filled

The SCDRO Mitigation Program Management Director directs, implements, coordinates, and advocates mitigation and resiliency goals, objectives, and outcomes set by the State. The SCDRO Mitigation Program Management Director takes a holistic view of implementation as sets of project activities, linking internal local government activities with those of the community's stakeholders to ensure progress and completion of outcomes identified in State plans, strategies, or other recovery objectives. This position reports to the SCDRO Program Management Director.

Mitigation Program Manager - Filled

The SCDRO Mitigation Program Manager directs, implements, coordinates, and advocates mitigation and resiliency goals, objectives, and outcomes set by the State. The Mitigation Program Manager serves as the Deputy Mitigation Director focusing on engaging State, County, Municipal and Community leaders to educate, inform and gain assistance in the disaster recovery process. Links internal government activities with those of the community's stakeholders to ensure progress and completion of outcomes identified in State plans, strategies, or other recovery objectives. Directly oversees the execution of the SCDRO Mitigation Program Delivery.

Administrative Coordinator I - Vacant

This position provides administrative support for the Disaster Recovery Management Director and Disaster Recovery Office. In addition to typing, filing and scheduling, performs duties such as data input, financial record keeping, coordination of meetings and conferences, recording and transcribing board minutes, obtaining supplies, coordinating mailings, and working on special projects. Also, answers non-routine correspondence and assembles highly confidential and sensitive information. Deals with a diverse group of important external callers and visitors as well as internal contacts at all levels of the organization.

Infrastructure Program Manager (Engineering Associate II) - Vacant

The Infrastructure PM provides overall management, strategic operations, administrative support, and communication for the infrastructure mitigation effort. The Infrastructure PM provides recommendations on complex projects. Prepares and reviews designs, drawings, plans and specifications for construction projects. Supervises field studies or surveys to collect technical data. Writes environmental permits. Leads the conceptualization, development, coordination, and evaluations of policies to ensure program coordination guidance and policies are in alignment with State Action Plan.

State Appraiser I - Vacant

The State Appraiser will determine the fair value for county or state tax for the Mitigation Buyout program. This individual will work closely with the staff attorney to develop and execute the buyout strategy for the project counties. Completes forms and records. Researches legal records to determine current ownership and land areas for appraisal. Appraises selected properties and prepares reports pertaining to appraisals.

Engineering Associate I (Housing) - Vacant

The Engineering Associate I (Housing) is responsible for basic SC Disaster Recovery Office (SCDRO) work products and project management techniques. The Coordinator manages various complicated projects under the direction of a higher-level management for the Mitigation Housing Projects.

Engineering Associate I (Infrastructure) - Vacant

The Engineering Associate I (Infrastructure) is responsible for basic SC Disaster Recovery Office (SCDRO) work products and project management techniques. The Coordinator manages various complicated projects under the direction of a higher-level management for the Mitigation Infrastructure Projects.

GIS Analyst – Vacant

The GIS Analyst collects, analyzes and interprets geographic information provided by geodetic surveys, aerial photographs, and satellite data. Researches and prepares maps and other spatial data in digital or graphic form. Performs data acquisition, entry, update and quality checking for the overall SCDRO Mitigation Program.

Engineering Associate I (Environmental Coordinator) – Vacant

The Environmental Coordinator will review, assess and prepare required records for the execution of the Mitigation Operations and associated construction management projects relative to environmental requirements (i.e., State Historical Preservation Office). Conducts field studies or surveys to collect data. Leads field inspection of construction projects. Prepares technical reports.

Program Coordinator II – Filled

Overall facilities coordinator. Has in-depth knowledge of headquarters and remote facilities infrastructure to maintain continuity of operations for employees. Responsible for coordinating and implementing headquarters and remote location network connectivity. Responsible for troubleshooting and resolving moderate complex IT issues. Assists with evaluating technologies and makes recommendations for adoption.

Project Coordinator - Vacant

The Project Coordinator is responsible for basic SC Disaster Recovery Office (SCDRO) work products and project management techniques. The Coordinator manages various complicated projects under the direction of a higher-level management.

Operations Specialist – 2 Filled

The Operations Specialist provides technical support and leadership to other managers within the Disaster Recovery Coordination Office; ensures that the highest quality of customer service is provided at all of the delivery systems within the Office; provides administrative support in areas of compliance, project management, training and development, regulations, policies and procedures.

Director of Support - Filled

The Director of Support works with vendors, suppliers of goods and services through every phase of vendor contract performance. From negotiation to termination, job duties include reviewing proposals, evaluating compliance with requirements and regulations, maintaining communication to ensure timely execution, and analyzing contract documents. The Director of Support also provides guidance to and supervises team members on contracts administration, compliance monitoring, concepts and regulations.

Policy and Procedure Manager - Filled

This position is responsible for developing manual practices, policy and procedures that interpret applicable Federal and State statutes, Action Plans, rules and regulations governing Community Development Block Grant-Disaster Recovery Program (CDBG-DR) and CDBG-MIT eligibility, case maintenance and management.

Research Manager - Filled

The Research Manager performs highly specialized work in complex data management and statistical systems such as the Disaster Recovery and Grant Reporting Systems (DRGR Systems) and other data management systems and projects for the SC Disaster Recovery Office. The Analyst assists in the preparation of databases which provides current information regarding the program activities underway including funding data and must be able to develop and analyze complex reports.

Legal Director - Filled

The Legal Director provides legal counsel and guidance to the Disaster Recovery Office on the development of disaster recovery plans and the implementation of activities. The Legal Director represents the Disaster Recovery Office in any litigation matters and supervises the legal staff.

Attorney III - Filled

The Legal Advisor provides legal counsel and guidance to the Disaster Recovery Office on the development of disaster recovery plans and the implementation of activities. The Legal Advisor assists in the completion of closing packets for buyouts and real estate transactions conducted by the SCDRO.

Paralegal – Filled

The Assistant Legal Advisor assists in providing and researching legal counsel and guidance to the Disaster Recovery Office on the development of disaster recovery plans and the implementation of activities. The Assistant Legal Advisor represents the Disaster Recovery Office in the absence of the Legal Advisor.

Legal Specialist – Filled

The Legal Specialist assists in drafting memos and documents for the legal department. The Legal Specialist is responsible for filing deeds and covenants.

Case Management Director - Filled

The Case Management Director provides supervision and general guidance to the Constituent Services Team and the Case Management Team.

Constituent Services Lead - Filled

The Constituent Services Lead serves as Ombudsman for the Disaster Recovery Office (DRO). This position manages the process for providing accurate and timely interaction/response to constituents. Communicates and facilitates processes in support of effective interaction between the DRO and the public. The Lead develops and implements comprehensive communications plans relating to researching, managing and resolving constituent complaints and concerns.

Constituent Services Assistant – 2 Filled

Constituent Services Assistant receives complaints from the public by phone, mail and in person, makes referrals to other agencies and assists in informal resolution of complaints. Investigate complaints concerning disaster recovery operations. Performs research, formulates objective opinions, and makes recommendations for corrective action, preventative measures and the promotion of competency, efficiency, and equity in mitigation efforts. Performs various administrative functions in the office of the ombudsman.

Case Management Supervisor – Filled

The Case Management Supervisor provides general supervision to the Case Managers, providing planning and coordination to ensure that the Case Managers successfully execute their mission.

Case Managers – 6 Filled

The Case Manager coordinates the communication with housing clients being served by the State's Housing Programs from intake to project closeout. The Case Manager notifies applicants about important timeline events such as contract signings, move out dates, and move in dates. The Case Manager forwards complaints concerning operations to Constituent Services for review.

Compliance Manager – Filled

Compliance Manager schedules work products for the Compliance Monitors and provides general supervision for the compliance staff. The Compliance Manager reports to the Director of Support.

Compliance Monitor – 6 Filled

Compliance Monitors conduct desktop reviews and field inspections through every phase of vendor contract performance. Compliance monitors' job duties include reviewing job sites, evaluating compliance

with requirements and regulations, and maintaining communication to ensure timely correction of noted deficiencies.

Financial Management Roles

Chief Financial Officer – Filled

The Chief Financial Officer Directs and oversees all aspects of the Finance, [Procurement](#) and Accounting functions of the program. This position is responsible for directing the development and establishment of policies and procedures as it pertains to finance and accounting.

Finance Manager – Filled

The Finance Manager is responsible for managing both grants and contracts for agency services; monitors compliance with contractual provisions. Performs managerial professional duties in accounting, budgeting or finance.

Fiscal Analyst II – 2 Filled and 2 Vacant

The Fiscal Analyst performs professional duties in the creation and maintenance of accounting records the verification and documentation of financial transactions or the preparation and management of program budget.

Director of Internal Audit – Filled

The Director of Internal Audit will direct and manage a professional staff in conducting audits, investigations and evaluations of the administrative, financial and operational activities of the program.

Internal Auditor 3 Filled

The Internal Auditor will perform audits or oversees audits of financial records, electronic data processing systems and program activities and operations to ascertain financial status, accuracy of data, efficiency or compliance with laws and regulations.

Additional Capacity

Given the potential complex nature of some of the projects undertaken with CDBG-MIT funding, the state may procure technical expertise to fill any knowledge gaps identified during the execution of the CDBG-MIT program.

SCDRO has partnered with the South Carolina Department of Natural Resources (SCDNR) to provide guidance and technical expertise on issues involving floodplain management.

Internal and Interagency Coordination

The SCDRO will utilize its current Interagency and Stakeholder Recovery Coordination Group to continue a multi-stakeholder approach. The monthly Interagency and Stakeholder Recovery Coordination Group consists of Long-Term Recovery Group members, VOADs, Charitable and Non-Profit groups, Disaster Case Managers, the SC DHEC, SCEMD, SCDNR, and representatives from county emergency management offices. This multi-agency formation has been key to considering recovery and mitigation from a holistic perspective. Their feedback has generated changes and improvement in SCDRO's policies and procedures.

Additionally, SCDRO will coordinate with the SCEMD and the State Hazard Mitigation Officer (SHMO) as it pertains to the development of the state Hazard Mitigation Plan, and the implementation of the CDBG-MIT Grant Program. SCDRO will coordinate with subrecipients responsible for implementing the grantee's action plan, and local and regional planning departments to ensure consistency and integration of CDBG-MIT activities with their respective planning efforts.

Technical Assistance

Technical assistance to program participants and sub-recipients will be provided by SCDRO program staff as needed. Requests should be made in a timely manner and within the time parameters of the appropriate program design. The State has developed some technical capacity through the implementation of its current CDBG-DR program, however the State may contract with other technical assistance providers should sufficient demand for technical assistance warrant.

Depending on the nature of assistance required, the State will coordinate with HUD to obtain an available provider, or engage in a formal procurement to hire a vendor with the expertise required to provide technical assistance in regulatory compliance, construction management, environmental procedures, etc.

To ensure orderly and effective compliance with the National Historic Preservation Act (NHPA) during mitigation undertakings, the SCDRO, has met with representatives of the South Carolina Historic Preservation Office (SHPO). SCDRO is currently operating under a FEMA/HUD approved Programmatic Agreement (PA) (Unified Federal Review Memorandum of Agreement) provided by HUD. SCDRO and SC SHPO have discussed the processes that will be utilized ensure review and compliance with Section 106 of the NHPA where required to so. The State's Disaster Recovery Office will also consult with the State Fish and Wildlife Service (South Carolina Department of Natural Resources) and the National Marine Fisheries Service concerning section 7 of the Endangered Species Act prior to program implementation.

Accountability

The Governor of South Carolina has designated the South Carolina Department of Administration as the administrative and fiscal agent responsible to HUD for program oversight, reporting and compliance. Program administration will be led under the direction of the Disaster Recovery Program Management Director of the South Carolina Department of Administration with oversight from a Governor-Appointed Oversight Steering Committee of three members. The Governor-appointed Committee will provide executive level oversight of the Mitigation Program. The South Carolina Disaster Recovery Office Program Coordinator, housed in the Department of Administration, is an executive-level appointee who will serve at the direct guidance of the Steering Committee. The Program Coordinator will serve as authorized signatory of the legally binding grant agreement (contract) between HUD and the State, will authorize major contracts and change orders, certify to financial reporting, and serve as the lead point of contact for HUD, including for monitoring and compliance and issue resolution.

The Program Management Director will oversee daily operations of the program, including applicant intake and eligibility, construction and contract management, policy and procedure, public information,

reporting, management of the Disaster Recovery Grant Reporting (DRGR) system and timely expenditures. The Chief Financial Officer at the Department of Administration will oversee financial compliance, financial monitoring, financial management, and oversight of the HUD line of credit.

SCDRO will initially rely on the CDBG expertise of the team that is in place and is currently monitoring the 2015 and 2016 grants. This expertise will be used to conduct the SCDRO's monitoring plan and to train any additionally hired SCDRO personnel in CDBG regulations, policies and procedures. The State currently has six people actively working on monitoring. Between auditing and monitoring activities, the State expects to examine/review over 25% of activities.

Certification of Accuracy of Risk Analysis Documentation

The State of South Carolina hereby certifies that it currently has the capacity to carry out mitigation activities in a timely manner and that the State has reviewed the requirements of this notice and requirements of Pub. L. 115-123 applicable to funds allocated by FR-6109-N-02, and certifies to the accuracy of Risk Analysis Documentation submitted to demonstrate that it has in place proficient financial controls and procurement processes; that it has adequate procedures to prevent any duplication of benefits as defined by section 312 of the Stafford Act, to ensure timely expenditure of funds; that it has to maintain a comprehensive mitigation website to ensure timely communication of application status to applicants for assistance, and that its implementation plan accurately describes its current capacity and how it will address any capacity gaps.

Marcia Adams, Executive Director, South Carolina Department of Administration

Date

Certifications

- a. The grantee certifies that it has in effect and is following a residential anti-displacement and relocation assistance plan in connection with any activity assisted with CDBG-MIT funding.
- b. The grantee certifies its compliance with restrictions on lobbying required by [24 CFR part 87](#), together with disclosure forms, if required by part 87.
- c. The grantee certifies that the action plan is authorized under State and local law (as applicable) and that the grantee, and any entity or entities designated by the grantee, and any contractor, subrecipient, or designated public agency carrying out an activity with CDBG-MIT funds, possess(es) the legal authority to carry out the program for which it is seeking funding, in accordance with applicable HUD regulations and this notice. The grantee certifies that activities to be undertaken with CDBG-MIT funds are consistent with its action plan.
- d. The grantee certifies that it will comply with the acquisition and relocation requirements of the URA, as amended, and implementing regulations at [49 CFR part 24](#), except where waivers or alternative requirements are provided for CDBG-MIT funds.
- e. The grantee certifies that it will comply with section 3 of the Housing and Urban Development Act of 1968 ([12 U.S.C. 1701u](#)) and implementing regulations at [24 CFR part 135](#).
- f. The grantee certifies that it is following a detailed citizen participation plan that satisfies the requirements of [24 CFR 91.115](#) or 91.105 (except as provided for in notices providing waivers and alternative requirements for this grant). Also, each local government receiving assistance from a State grantee must follow a detailed citizen participation plan that satisfies the requirements of [24 CFR 570.486](#) (except as provided for in notices providing waivers and alternative requirements for this grant).
- g. State grantee certifies that it has consulted with affected local governments in counties designated in covered major disaster declarations in the non-entitlement, entitlement, and tribal areas of the State in determining the uses of funds, including the method of distribution of funding, or activities carried out directly by the State.
- h. The grantee certifies that it is complying with each of the following criteria:
 - (1) Funds will be used solely for necessary expenses related to mitigation activities, as applicable, in the most impacted and distressed areas for which the President declared a major disaster in 2015, 2016, or 2017 pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1974 ([42 U.S.C. 5121 et seq.](#)).
 - (2) With respect to activities expected to be assisted with CDBG-MIT funds, the relevant action plan has been developed to give priority to activities that will benefit low- and moderate-income families.
 - (3) The aggregate use of CDBG-MIT funds shall principally benefit low- and moderate-income families in a manner that ensures that at least 50 percent (or another percentage permitted by HUD in a waiver

published in an applicable **Federal Register** notice) of the CDBG-MIT grant amount is expended for activities that benefit such persons.

(4) The grantee will not attempt to recover any capital costs of public improvements assisted with CDBG-MIT funds by assessing any amount against properties owned and occupied by persons of low- and moderate-income, including any fee charged or assessment made as a condition of obtaining access to such public improvements, unless: (a) CDBG-MIT funds are used to pay the proportion of such fee or assessment that relates to the capital costs of such public improvements that are financed from revenue sources other than under this title; or (b) for purposes of assessing any amount against properties owned and occupied by persons of moderate income, the grantee certifies to the Secretary that it lacks sufficient CDBG funds (in any form) to comply with the requirements of clause (a).

i. The grantee certifies that the grant will be conducted and administered in conformity with title VI of the Civil Rights Act of 1964 ([42 U.S.C. 2000d](#)), the Fair Housing Act ([42 U.S.C. 3601-3619](#)), and implementing regulations, and that it will affirmatively further fair housing.

j. The grantee certifies that it has adopted and is enforcing the following policies, and, in addition, must certify that they will require local governments that receive grant funds to certify that they have adopted and are enforcing:

(1) A policy prohibiting the use of excessive force by law enforcement agencies within its jurisdiction against any individuals engaged in nonviolent civil rights demonstrations; and

(2) A policy of enforcing applicable State and local laws against physically barring entrance to or exit from a facility or location that is the subject of such nonviolent civil rights demonstrations within its jurisdiction.

k. The grantee certifies that it (and any subrecipient or administering entity) currently has or will develop and maintain the capacity to carry out mitigation activities, as applicable, in a timely manner and that the grantee has reviewed the respective requirements of this notice. The grantee certifies to the accuracy of its [Public Law 115-56](#) Financial Management and Grant Compliance certification checklist, or other recent certification submission, if approved by HUD, and related supporting documentation referenced at section V.A.1.a of FR-6109-N-02 and its implementation plan and capacity assessment and related submissions to HUD referenced at section V.A.1.b of FR-6109-N-02.

l. The grantee certifies that it considered the following resources in the preparation of its action plan, as appropriate: FEMA Local Mitigation Planning Handbook: https://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf; DHS Office of Infrastructure Protection: <https://www.dhs.gov/sites/default/files/publications/ip-fact-sheet-508.pdf>; National Association of Counties, Improving Lifelines (2014): https://www.naco.org/sites/default/files/documents/NACo_ResilientCounties_Lifelines_Nov2014.pdf; the National Interagency Coordination Center (NICC) for coordinating the mobilization of resources for wildland fire: <https://www.nifc.gov/nicc/>; the U.S. Forest Service's resources around wildland fire (<https://www.fs.fed.us/managing-land/fire/>); and HUD's CPD Mapping tool: <https://egis.hud.gov/cpdmaps/>.

m. The grantee certifies that it will not use CDBG-MIT funds for any activity in an area identified as flood prone for land use or hazard mitigation planning purposes by the State, local, or tribal government or delineated as a Special Flood Hazard Area (or 100-year floodplain) in FEMA's most current flood advisory maps, unless it also ensures that the action is designed or modified to minimize harm to or within the floodplain, in accordance with Executive Order 11988 and [24 CFR part 55](#). The relevant data source for this provision is the State, local, and tribal government land use regulations and hazard mitigation plans and the latest-issued FEMA data or guidance, which includes advisory data (such as Advisory Base Flood Elevations) or preliminary and final Flood Insurance Rate Maps.

n. The grantee certifies that its activities concerning lead-based paint will comply with the requirements of [24 CFR part 35](#), subparts A, B, J, K, and R.

o. The grantee certifies that it will comply with environmental requirements at [24 CFR part 58](#).

p. The grantee certifies that it will comply with applicable laws.

Marcia Adams, Executive Director, South Carolina Department of Administration

Date

APPENDICES

Response to Public Comment

Williamsburg Public Hearing (November 26, 2019)

Comment: Georgetown has experienced continuous flooding over the past 5-6 years. Front Street in the downtown area floods on a monthly basis. The area is both commercial and residential. We may need approximately 200 feet of wall to keep the water out of that area. There are no formulated projects or solutions as of yet – still in the concept phase. We have not applied for any other funding from EMD or DNR. Are there any possible infrastructure projects that may be covered with this funding for this problem? How and where do I apply?

Response: Once a project or solution has been identified, it may meet SCDRO eligibility criteria. There should be a study conducted to determine what the issue is and identify a solution. SCDRO must have data to support a mitigation need. The programs will assist eligible counties and municipalities in conducting studies to determine mitigation solutions and feasibility. SCDRO will have an application process. The program will only consider projects from counties and municipalities that submit applications. SCDRO will be accepting applications no sooner than May 2020.

Horry Public Hearing (December 16, 2019)

Charleston Public Hearing (January 2020)

Other Comments Received

2019 Area Median Income Limits by Family Size and County

| 2019 HUD Area Median Income Limits for South Carolina | | | | | | | | | | |
|---|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| County Name | County AMI | % of AMI | 1 Person | 2 Person | 3 Person | 4 Person | 5 Person | 6 Person | 7 Person | 8 Person |
| Berkeley County | 77,900 | 30% AMI | 16,350 | 18,700 | 21,330 | 25,750 | 30,170 | 34,590 | 39,010 | 43,430 |
| | | 50% AMI | 27,300 | 31,200 | 35,100 | 38,950 | 42,100 | 45,200 | 48,300 | 51,450 |
| | | 80% AMI | 43,650 | 49,850 | 56,100 | 62,300 | 67,300 | 72,300 | 77,300 | 82,250 |
| | | 120% AMI | 65,475 | 74,775 | 84,150 | 93,450 | 100,950 | 108,450 | 115,950 | 123,375 |
| Calhoun County | 68,900 | 30% AMI | 14,500 | 16,910 | 21,330 | 25,750 | 30,170 | 34,590 | 39,010 | 43,430 |
| | | 50% AMI | 24,150 | 27,600 | 31,050 | 34,450 | 37,250 | 40,000 | 42,750 | 45,500 |
| | | 80% AMI | 38,600 | 44,100 | 49,600 | 55,100 | 59,550 | 63,950 | 68,350 | 72,750 |
| | | 120% AMI | 57,900 | 66,150 | 74,400 | 82,650 | 89,325 | 95,925 | 102,525 | 109,125 |
| Charleston County | 77,900 | 30% AMI | 16,350 | 18,700 | 21,330 | 25,750 | 30,170 | 34,590 | 39,010 | 43,430 |
| | | 50% AMI | 27,300 | 31,200 | 35,100 | 38,950 | 42,100 | 45,200 | 48,300 | 51,450 |
| | | 80% AMI | 43,650 | 49,850 | 56,100 | 62,300 | 67,300 | 72,300 | 77,300 | 82,250 |
| | | 120% AMI | 65,475 | 74,775 | 84,150 | 93,450 | 100,950 | 108,450 | 115,950 | 123,375 |
| Chesterfield County | 46,700 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Clarendon County | 45,400 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Darlington County | 54,600 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 29,200 | 31,350 | 33,500 | 35,650 |
| | | 50% AMI | 18,900 | 21,600 | 24,300 | 27,000 | 29,200 | 31,350 | 33,500 | 35,650 |
| | | 80% AMI | 30,250 | 34,600 | 38,900 | 43,200 | 46,700 | 50,150 | 53,600 | 57,050 |
| | | 120% AMI | 45,375 | 51,900 | 58,350 | 64,800 | 70,050 | 75,225 | 80,400 | 85,575 |
| Dillon County | 41,500 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Dorchester County | 77,900 | 30% AMI | 16,350 | 18,700 | 21,330 | 25,750 | 30,170 | 34,590 | 39,010 | 43,430 |
| | | 50% AMI | 27,300 | 31,200 | 35,100 | 38,950 | 42,100 | 45,200 | 48,300 | 51,450 |
| | | 80% AMI | 43,650 | 49,850 | 56,100 | 62,300 | 67,300 | 72,300 | 77,300 | 82,250 |
| | | 120% AMI | 65,475 | 74,775 | 84,150 | 93,450 | 100,950 | 108,450 | 115,950 | 123,375 |
| Florence County | 62,000 | 30% AMI | 12,750 | 16,910 | 21,330 | 25,750 | 30,170 | 34,590 | 37,650 | 40,100 |
| | | 50% AMI | 21,250 | 24,300 | 27,350 | 30,350 | 32,800 | 35,250 | 37,650 | 40,100 |
| | | 80% AMI | 34,000 | 38,850 | 43,700 | 48,550 | 52,450 | 56,350 | 60,250 | 64,100 |
| | | 120% AMI | 51,000 | 58,275 | 65,550 | 72,825 | 78,675 | 84,525 | 90,375 | 96,150 |

| County Name | County AMI | % of AMI | 1 Person | 2 Person | 3 Person | 4 Person | 5 Person | 6 Person | 7 Person | 8 Person |
|---------------------|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Georgetown County | 59,400 | 30% AMI | 12,500 | 16,910 | 21,330 | 25,750 | 30,170 | 34,500 | 36,850 | 39,250 |
| | | 50% AMI | 20,800 | 23,800 | 26,750 | 29,700 | 32,100 | 34,500 | 36,850 | 39,250 |
| | | 80% AMI | 33,250 | 38,000 | 42,750 | 47,500 | 51,300 | 55,100 | 58,900 | 62,700 |
| | | 120% AMI | 49,875 | 57,000 | 64,125 | 71,250 | 76,950 | 82,650 | 88,350 | 94,050 |
| Horry County | 61,200 | 30% AMI | 12,850 | 16,910 | 21,330 | 25,750 | 30,170 | 34,590 | 37,950 | 40,400 |
| | | 50% AMI | 21,450 | 24,500 | 27,550 | 30,600 | 33,050 | 35,500 | 37,950 | 40,400 |
| | | 80% AMI | 34,300 | 39,200 | 44,100 | 48,950 | 52,900 | 56,800 | 60,700 | 64,650 |
| | | 120% AMI | 51,450 | 58,800 | 66,150 | 73,425 | 79,350 | 85,200 | 91,050 | 96,975 |
| Lee County | 41,200 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Marion County | 41,600 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Marlboro County | 41,600 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Orangeburg County | 46,900 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Sumter County | 50,300 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |
| Williamsburg County | 43,100 | 30% AMI | 12,490 | 16,910 | 21,330 | 25,750 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 50% AMI | 18,350 | 20,950 | 23,550 | 26,150 | 28,250 | 30,350 | 32,450 | 34,550 |
| | | 80% AMI | 29,300 | 33,500 | 37,700 | 41,850 | 45,200 | 48,550 | 51,900 | 55,250 |
| | | 120% AMI | 43,950 | 50,250 | 56,550 | 62,775 | 67,800 | 72,825 | 77,850 | 82,875 |

Financial Projections

| Month | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2019-2020 | | | 2020-2021 | | | | | | | | | | | |
| QPR QTR | Qtr 2 | | | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$0 | | | \$500,000 | | | \$4,500,000 | | | \$4,500,000 | | | \$4,500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$761,227 | | | \$2,061,227 | | | \$1,961,227 | | | \$1,961,227 | | | \$1,861,227 | | |
| <i>Actual</i> | | | | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$0 | | | \$0 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | | | | |
| <i>Projected</i> | \$1,500,000 | | | \$3,300,000 | | | \$7,700,000 | | | \$7,700,000 | | | \$7,600,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2021-2022 | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | |
| <i>Projected</i> | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | | \$4,000,000 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | |
| <i>Projected</i> | \$1,961,227 | | | \$1,761,227 | | | \$1,761,227 | | | \$1,761,227 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | |
| <i>Projected</i> | \$8,200,000 | | | \$8,000,000 | | | \$8,000,000 | | | \$7,000,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2022-2023 | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | |
| <i>Projected</i> | \$2,000,000 | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | |
| <i>Projected</i> | \$2,261,227 | | | \$2,261,227 | | | \$2,261,227 | | | \$4,261,227 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | |
| <i>Projected</i> | \$5,500,000 | | | \$3,500,000 | | | \$3,500,000 | | | \$5,000,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2023-2024 | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$500,000 | | | \$500,000 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | |
| <i>Projected</i> | \$4,261,227 | | | \$4,261,227 | | | \$4,261,227 | | | \$4,261,227 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | |
| <i>Projected</i> | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2024-2025 | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | |
| <i>Projected</i> | \$500,000 | | | \$500,000 | | | \$210,500 | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | |
| <i>Projected</i> | \$4,261,227 | | | \$4,261,227 | | | \$4,550,727 | | | \$4,761,227 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | |
| <i>Projected</i> | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | | A | M | J |
|-------------------|-------------|---|---|-------------|---|---|-------------|---|---|----------------------------------|-------------|---|---|
| State Fiscal Year | 2025-2026 | | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Year 6 >50% Expended Requirement | Qtr 2 | | |
| Administration | | | | | | | | | | | | | |
| Projected | \$238,773 | | | \$238,773 | | | \$238,773 | | | | \$238,773 | | |
| Actual | | | | | | | | | | | | | |
| Planning | | | | | | | | | | Required Amount | | | |
| Projected | | | | | | | | | | \$78,795,000 | | | |
| Actual | | | | | | | | | | | | | |
| Housing | | | | | | | | | | Projected Amount | | | |
| Projected | | | | | | | | | | \$131,500,000 | | | |
| Actual | | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | | |
| Projected | \$4,761,227 | | | \$4,761,227 | | | \$4,761,227 | | | | \$4,761,227 | | |
| Actual | | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | Actual Amount | | | |
| Projected | | | | | | | | | | \$0 | | | |
| Actual | | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | | |
| Projected | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | | | \$5,000,000 | | |
| Actual | \$0 | | | \$0 | | | \$0 | | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|--------------------------|-------------|---|---|-------------|---|---|-------------|---|---|-------------|---|---|
| State Fiscal Year | 2026-2027 | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | |
| Administration | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,773 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Planning | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Housing | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Infrastructure | | | | | | | | | | | | |
| <i>Projected</i> | \$4,761,227 | | | \$4,761,227 | | | \$4,761,227 | | | \$4,761,227 | | |
| <i>Actual</i> | | | | | | | | | | | | |
| FEMA-Funded Match | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | |
| <i>Actual</i> | | | | | | | | | | | | |
| Quarterly Total | | | | | | | | | | | | |
| <i>Projected</i> | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | | \$5,000,000 | | |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | |

| Month | J | A | S | O | N | D | J | F | M | A | M | J | |
|--------------------------|-----------|---|---|-----------|---|---|-----------|---|---|-----------|---|---|---------------|
| State Fiscal Year | 2027-2028 | | | | | | | | | | | | |
| QPR QTR | Qtr 3 | | | Qtr 4 | | | Qtr 1 | | | Qtr 2 | | | TOTAL |
| Administration | | | | | | | | | | | | | |
| <i>Projected</i> | \$238,773 | | | \$238,773 | | | \$238,773 | | | \$238,764 | | | \$7,879,500 |
| <i>Actual</i> | | | | | | | | | | | | | \$0 |
| Planning | | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | | \$9,710,500 |
| <i>Actual</i> | | | | | | | | | | | | | \$0 |
| Housing | | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | | \$35,000,000 |
| <i>Actual</i> | | | | | | | | | | | | | \$0 |
| Infrastructure | | | | | | | | | | | | | |
| <i>Projected</i> | \$134,917 | | | | | | | | | | | | \$100,000,000 |
| <i>Actual</i> | | | | | | | | | | | | | \$0 |
| FEMA-Funded Match | | | | | | | | | | | | | |
| <i>Projected</i> | | | | | | | | | | | | | \$5,000,000 |
| <i>Actual</i> | | | | | | | | | | | | | \$0 |
| Quarterly Total | | | | | | | | | | | | | |
| <i>Projected</i> | \$373,690 | | | \$238,773 | | | \$238,773 | | | \$238,764 | | | \$157,590,000 |
| <i>Actual</i> | \$0 | | | \$0 | | | \$0 | | | \$0 | | | \$0 |